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MEMOIR ON SPRAINS. By M. A. Pelletier, Hospital Surgeon at Mans.

It is to be regretted that, while cases presenting any thing rare or peculiar, are generally told with minuteness, little or no notice is taken of diseases that are apparently slight, but which, from their great frequency, ought to be well known, and have some proper rules of treatment laid down. This particularly applies to the subject we have chosen, as *sprains* are thought to be curable by any body, and quacks employ, to cure them, means that are sometimes dangerous.

To be precise, we would define sprains to be the forcible extension of the white fibrous tissues in the vicinity of joints, and serving them as means of union, such as ligaments, capsular fibres, and tendons, which for the most part act as ligaments. The causes of sprain may be distinguished into direct or determining, and indirect or predisposing. The direct causes generally are all efforts supported by the articulations, either in the exercise of different professions or in the different accidents to which men are liable. As these efforts must separate the articular surfaces, so they must have the effect of stretching the ligaments more or less. Therefore, those joints most exposed to great efforts are the most likely to be sprained, particularly if these joints do not possess a certain laxity, capable of permitting considerable movements without much extension of their ligaments. The scapulo-humeral joint, in consequence of possessing this laxity, although partly exposed to such accidents, is rarely a subject of sprain: on the contrary, the tibio-tarsal, radio-capsule joints, &c. whose articulating surfaces are closely united, give the most frequent examples of sprains. The tibio-tarsal articulation is particularly so, and in itself presents more cases of sprain than all the other joints of the body. It can equally well be conceived that the ligaments in these articulations most exposed to support violent efforts, are most liable to sprain. So M. P. remarks, that he has found that, out of ten sprains of the tibio-tarsal articulation, eight at least affect the external ligaments; the foot having more disposition to adduction than to abduction. Among the indirect causes, some are relative to the mode of life or profession of individuals, others to constitution. In the first class may be placed the custom of taking violent exercise, the use of high-heeled shoes, pattens, &c.: in the second class we find considerable fatness in conjunction with a lymphatic temperament, the one increasing the weight of the body, and the other relaxing the ligaments; scrofula, &c.

The nature and character of Sprains.—It would at first appear that so simple an accident, particularly when there is no tearing of the ligament, could hardly cause any troublesome symptoms; but theory teaches, and experience every day shows, that fibrous tissues, which could be divided by a sharp instrument without pain, are never submitted to violent distention without causing much pain, and symptoms more or less severe; but the vital properties being naturally very obscure in these tissues, they cannot immediately be exalted, so that some days often will elapse between the distention and the development of the inflammation caused by it. And such is precisely the source of the imprudencies which patients commit, in continuing to exercise a limb after it has suffered a sprain. Suppose a violent extension to have been applied to the foot, the patient experiences at the moment a severe pain in the distended ligaments. This soon ceases, and he resumes his exercise, which he had for a moment interrupted. After some time, the vital properties develop themselves gradually in the distended ligaments; and inflammation shows itself; the pain becomes intolerable, and, if the subject is scrofulous, the consequences may be most serious. M. Pelletier thinks that, from neglect, a sprain becomes a greater evil and more difficult of cure than a fracture.

Diagnosis of Sprain.—An unfailing method of discovering sprain is to put the limb in the situation it was at the time of the accident, and gradually and carefully to bend the joint in the same way. For example, if an external sprain of the foot is suspected, to carry it gradually into adduction; soon pain begins, which disappears on moving the joint the opposite way.

Sprain should never be considered as a trivial accident. It often happens that what at

first appears simple, shows in a few days very urgent and distressing symptoms, when neglected or improperly treated. The greatest precautions are necessary, and it is better to err on the safe side by too much than too little care. To establish the basis of a regular treatment of disease, it is indispensable to be acquainted with the progress of the disorder, and to mark precisely its different periods: this is particularly applicable in sprain, since its treatment varies much in its different stages, and what would be serviceable at one stage may be most improper at another. Let us suppose a sprain entirely left to nature's efforts, and going on as far as it can, we can distinguish four periods: 1st, the forcible extension of the ligaments, with severe but generally evanescent pains; 2d, the development of acute inflammation in the parts injured; 3d, the change from acute to chronic inflammation; 4th, organic degeneration of the inflamed parts, and accidents attending it. After describing each of these periods, we shall point out the appropriate treatment.

First period—the forcible extension of the ligaments. This begins at the instant when the accident has happened, and lasts generally from twenty-four hours to two or three days. It results from several causes. It may be asserted that, in general, inflammation manifests itself so much the more quickly as the extension has been great, the subject lymphatic, young, and gifted with much vitality: on the contrary, so much the more slowly as the sprain has been slight, the subject aged, or of a constitution less irritable. When sprain takes place, there is acute pain in the distended ligaments: sometimes this pain disappears very quickly, and the person resumes the exercise he was about. Now this is the insidious part of it, and favours the development of further mischief, by preventing persons from taking that rest which is so essential to the cure. Soon after the extension there comes on a puffy swelling in the neighbourhood of the parts affected, a true active œdema, sometimes even ecchymosis, greater or less. These must not be considered as the result of inflammation, (which has not had time to develop itself yet,) but as the effect of a lymphatic afflux into the cellular tissue, where the pain was felt. What proves this is, that the swelling gives only an œdematous feel, without heat or local pain on pressure, and which quickly disappears with rest. Surgeons, who have not sufficiently observed this complaint, are deceived by this disappearance of the swelling, which they regard as the principal symptom; and look upon the disease as terminated when this is dispersed, that is, on the second or third day. So that they give up all further treatment, and permit exercise at the very time when inflammatory symptoms are about to appear.

Second period—development of active inflammation in the distended ligaments. The tissues of the living animal economy, when subject to the influence of excitation, *cæteris paribus*, inflame with a rapidity corresponding to their supply of blood-vessels, and to the degree with which they are endued with well developed vital properties. But this inflammation is not immediate: it is, in fact, rare that it manifests itself before twelve or twenty-four hours in tissues the most disposed to its invasion; and, in those less disposed to its influence, many days elapse before it appears. This is in conformity with what happens after grand operations, particularly amputations of limbs, when numerous and different tissues are divided. We must not, then, be astonished that inflammation of fibrous tissues, whose vital properties are so obscure, does not appear till a distant period from the time of the accident producing it. This circumstance, attention to which is of the greatest moment in the treatment of sprains, is then quite naturally explained by the mode of organization of the affected tissues. Generally, inflammatory symptoms manifest themselves from the second to the fourth day, and very frequently when the first pain is quite gone. If there is little swelling, the parts sprained have a natural appearance, and the patient, not understanding his situation, often refuses to keep at rest. Spirituous applications appear to do good by helping to dissipate the swelling during this treacherous calm; but soon the scene changes. The patient feels in the injured part pain, at first dull, then more severe, at last more acute, preventing the possibility of moving the joint without anguish. Soon after, a shining appearance, heat and swelling, painful feeling of distention, throbbings and dartings in the part, come on; and few medical men will not now acknowledge the necessity of rest and antiphlogistic means; but scarcely are these first symptoms diminished, when the patient gets tired of confinement, and wishes to resume his ordinary avocations; while the surgeon, thinking he has now only to forward resolution, instead of feeling that there is still inflammation to destroy, abandons too soon the antiphlogistic system, and passes to a resolutory treatment, thus recalling the inflammatory symptoms, and making them chronic. Here terminates the second period. We may easily imagine what must be the consequence of applying in this stage spirituous resolving embrocations, &c. We have seen from it the inflammation rapidly extend itself to the synovial membranes and neighbouring tissues, bringing on disorganization and suppuration of these tissues, caries of the bones, hectic fever, and death.

Third period—change from active to chronic inflammation. The affected joint becomes the seat of an habitual irritation, too weak, when attended to, to bring back inflammation in the acute form, but sufficient to make it pass into the chronic. This joint then becomes enlarged, and towards night is swollen, feels stiff: the patient, not aware of the mischief that may follow, continues his exercise, and the more willingly as he looks upon the play of the joint as absolutely necessary to its gaining strength. We have seen cases kept up this way for years.

Fourth period—"Degeneration Lardacée," lardaceous degeneration of the inflamed white tissues. The continuance of chronic inflammation of the affected ligaments, the cure of which is the work of years, is of itself troublesome enough, and yet this is by no means the most fatal consequence that may occur from neglected sprain. Often, indeed, the chronic inflammation kept up by exercise and other means, extends itself by degrees to the cellular tissues, the synovial membranes, periosteum, and even to the bones themselves. This inflammation becomes more intense according as it attacks parts more vascular and nervous, causing pains which daily aggravate till they force the patient to keep his bed entirely, and the surgeon to have recourse again to antiphlogistic means. But it is too late; the return of the lancinating pains announce a lardaceous degeneration, which, once established, there is no escaping from. The joint loses its natural form, puffs up, becomes round, the skin covering it becomes semi-transparent, and of a milky white; a constant feeling of deep distention, and at times violent lancinating pains, torment the patient. Often abscesses in the synovial membranes under the periosteum, denudation and caries of the bones, with fistulous openings. The lancinating pains become almost constant, with sleeplessness, marasmus, hectic fever, night sweats, colliquative diarrhœa, and, if the part is not sacrificed to the preservation of the individual, death is not slow in bringing to a conclusion this deplorable scene. Such are the terminations of sprains, neglected or empirically treated.

We now proceed to the *treatment*.

There are few diseases against which have been devised more numerous, much varied, and sometimes more opposite modes of cure. Must we infer from this that the authors who have mentioned them have been deceived, or that the disease may be cured by methods essentially different. The most opposite means may, we doubt not, cure a sprain; but this truth, which astonishes the ignorant man because he cannot understand it; which makes him consider the curative art as merely conjectural, and depending for its results upon chance, explains itself quite naturally to the physician, who reasons and draws his curative means from the result of observation.

We have already distinguished four periods in the history of this complaint, and the explanations we have added must make it clear that, if each period called for certain means, these means ought to be different when applied at these different periods. It is precisely for want of this important distinction, and from having considered sprains as always alike, whatever stage they might be in, that the same confidence has been extended to cold applications and emollient poultices, to leeches and stimulating applications, to Goulard water and camphorated spirit, rest and exercise, &c.; and that, in consequence, a perfect chaos has arisen from the *ensemble* of these means of cure. What is still more to be lamented is, that the use of certain means at particular periods being supported by the sanction of celebrated men, ignorant quacks employ the same means in all cases without distinction, and in all the stages of the disease. It is easy to conceive what mischief may arise from such abuses. There is but one way to avoid these fatal errors, and to establish fixed rules for the treatment of this disease, viz. to review the four periods as they occur, and to point out successively the treatment suitable to each. If the surgeon is called to a patient in the first period, when there is considerable pain caused by violent extension, there are two points to be attended to. The first is to examine if there is rupture of any of the ligaments, which might be determined by estimating the force of the cause, the situation of the parts at the time of the accident, the continuance of pains, and the rapid swelling of the neighbouring parts. This last symptom is important to note: it renders the development of inflammation almost inevitable, whatever precautions are adopted, and therefore at once indicates the necessity of antiphlogistic means. The second thing to be attended to is to allay the pains and prevent the accession of inflammation; and, among the means of doing so, *rest* is the first; without this all others will fail; and, in conjunction with rest, we must make use of *revulsive* or *resolutory means*. These are usually looked upon to consist in certain external applications, which have the power of hastening back the circulating fluids into the great vessels, from whence they had been sent with so much increased energy as to distend the capillary vessels of the part affected. Without cavilling about this definition, we shall distinguish these means into three classes, essentially different in their manner of acting: 1st, cooling resolvents; 2d, astringent resolvents: 3d, irritating resolvents.

Cooling Resolvents.—In this class are all those applications which diminish the heat of the part, as snow, cold bath, &c. It has long been recommended to plunge the affected part into very cold water immediately after the accident. Now this we can imagine may sometimes prove serviceable, but in others may be most pernicious. To satisfy ourselves of this, let us analyze its manner of action. If the action of cold is sufficiently strong, but only temporary, it causes at first a numbing of the part, a sort of local asphyxia; all the organic energy appears to come to the aid of the part threatened with mortification, and by a reaction, the force of which is in proportion to the strength and age of the patient, strongly awakens the life of that part, pushes towards it with force a great quantity of blood; it becomes, in fact, a centre of irritation, sometimes of instantaneous inflammation. One has only to plunge the hand into snow or very cold water, and observe the effects, to be satisfied of this. This means, then, when employed only for a short time, by bringing on powerful reaction, acts as a very active excitant. Some authors, for this reason, place heat and cold on the same parallel, calling the first a

direct, the second an indirect excitant, their results being similar. If the action of cold is energetic and long continued, the parts submitted to its influence are as it were paralyzed, and this supension of their vital properties may cause the extinction of their irritation. This is what happens in a part frost-bitten. After all these considerations, one may perceive that the immersion must be, *cæteris paribus*, prolonged as long as reaction is to be feared; longer, consequently, in a young than an old subject, in a vigorous than in a weakened state. If one might fix a general period during which immersion should be continued, we would say from eight to twelve hours. We have adopted for the employment of this means a method which appears to obviate the greater part of the inconveniences which may attend it. It consists in plunging the affected part into water, the temperature of which is only a few degrees below that of the skin, and gradually diminishing the temperature till the requisite cold is induced. By doing this we almost always avoid the inflammatory reaction, which might show itself after twelve or fifteen hours cooling. There are circumstances which ought to prevent this means being used, as, for instance, in women near the menstrual period, in persons subject to internal inflammations, and in all immediately after meals, as we have seen it, when this was not attended to, cause violent vomitings.

Astringent Resolvents.—This includes those applications which, applied topically, cause a constriction of the parts, without any apparent inflammatory reaction, as Goulard water. The best way of applying this is to keep the part constantly covered with compresses moistened with this fluid during several days. We would prefer this plan to the immersion.

Irritating Resolvents.—By this is meant camphorated spirits, soap liniment, eau de Cologne; all, in fact, which have alcohol for their base. So far from being resolvent, we are inclined to think that their effect is to bring on inflammation where it was not before, and increase it if previously there. They should never be applied in the first or second periods; in the third they are sometimes applicable. Much mischief is done by the indiscriminate applications of such medicaments, and therefore they ought to be proscribed in these cases.

Compression.—Some writers have recommended the use of compression in the first period of this complaint, considering it as opposed to the tumefaction of the parts affected; but reason and experience demonstrate that this means is then most hurtful. It can only be useful when the patient is getting better, and beginning to take exercise.

Narcotics.—Any means capable of removing or even allaying the pain must be serviceable: in fact, the pain acts as an exciting cause to inflammation, which it is so essential to prevent. Narcotics joined with alcohol, such as the absurd and contradictory association of an irritating and calming medicament, like laudanum, are hurtful. A simple aqueous decoction of opium, or the poppy heads, or infusion of saffron, employed in fomentation or poultice, is generally successful in allaying pain.

Local Bleedings.—The application of leeches is sometimes useful, sometimes even indispensable, in the treatment; sometimes, however, it is hurtful. For example, when the sprain is slight, the subject weak, of a dry nervous temperament, there is no need for them; the other means suffice: but if the sprain is violent, the subject young, vigorous, of a lymphatic or sanguineous temperament, and if the swelling immediately becomes great, then leeches must be freely had recourse to. They should always be applied to the most cellular and fleshy parts, and several inches away from the strained parts. When applied immediately to the injured parts, they constantly produce troublesome effects. The irritation caused by the bites unites with that from the sprain, the swelling increases frightfully, and the inflammation becomes more intense.

Emollient applications.—Under this head we range poultices, warm baths, fumigations, and fomentations. These means, the advantages of which are incontestable in the treatment of sprain, are often very successful after leeching. We have observed that, when they are applied before the leeches, and particularly when very hot, they increased the swelling, and promoted the development of inflammation, rendering the pain sometimes so intolerable that the further use of them becomes impossible. We should then always premise a copious local depletion, and regulate the temperature, so as not to increase the heat in the affected part, which is already too considerable.

Treatment of the second period of Sprain, or acute inflammation of the distended ligaments. Although in the first stage many means, apparently opposite in their mode of action, have produced equally satisfactory effects, we must not expect this in the second. There now exists an inflammation, painful in its nature and difficult to root out, owing to the organization of the affected tissues, and dangerous in its consequences, by its contiguity to a joint which it may involve. Only one kind of treatment now remains, namely the antiphlogistic. Thus the cold bath, but particularly alcoholic preparations, may produce the most fatal consequences. To remove all causes capable of inciting or increasing inflammation, —to diminish the quantity of blood carried to the part inflamed,—to oppose, as much as possible, the exaltation of vital properties in the affected tissues,—to destroy, or at least lull, pain,—to avoid or oppose the irritation of organs which sympathise more directly with the diseased parts,—such are the principal indications and the basis of treatment at this period. The complete rest of the affected joint, the horizontal position to prevent swelling, leeches in abundance, and with the precautions above mentioned, and then large and thick poultices made of linseed meal and decoction of poppies, are to be had recourse to.

If poultices keep up the heat too much, fomentations may be substituted. The intimate connexion between the intestinal canal and the joints is now well known: it is, therefore, necessary to put the patient on a mild regimen, to avoid whatever may possibly produce gastro-intestinal irritation. It is amply proved by experience that indigestion, the abuse of spirits, &c. have an evil influence on sprains.

Treatment in the third period, when the inflammation has become chronic.—When the patient has not attended to giving the joint rest for a sufficient time, or when the treatment has been improper, &c. the inflammation of the distended ligaments may, in moderate cases, insensibly diminish in intensity; but, being always kept up by improper treatment, or injudicious exercise, it at length passes to a chronic state, and may thus perpetuate itself indefinitely. Consulted under such circumstances, the surgeon must not lose sight of the fact that this chronic inflammation, although it does not offer any very pressing symptoms, is not the less an exaltation of vital properties, which it is necessary to oppose by appropriate means: therefore exercise, exciting resolvents, and all stimuli, of whatever nature they may be, are directly mischievous. It is by not attending to these principles that physicians prolong such cases during years; and, what is more distressing, cause, by the empirical applications made use of, a degeneration of the affected tissues, inflammation and caries of the bones, and even loss of limb. It is then essential, in this third period, to employ still the means recommended in the second, but modified according to the different form of the inflammation. Thus rest is not so essential, at least, unless the mischief is so advanced, and disorganization so much to be dreaded, that it only remains to attempt a cure by anchylosis, and then the limb must be fixed in the most convenient position. But, should this not be the case, the joint should daily be moved gently, taking care, as much as possible, during those movements, to place the affected ligament in a relaxed position, so as not to bring on again fresh distentions. Leeches may be applied with much advantage, if there is swelling and pain; five or six, every two or three days, will be sufficient. Here it is particularly necessary to apply a principle in pathology too little known. In chronic diseases the treatment should be chronic,—that is, should act in a slow but continued manner. It is by employing local bleedings in this manner for thirty or forty days that the most satisfactory results have been obtained, not only in sprains, but in almost all slow inflammations, even with threatening of disorganization. When the inflammation is quite dissipated, and the joint in an indolent state, and still a puffiness and soft feel in the ligaments remain, we may then have recourse to resolvents, but cautiously, and without ever painfully increasing the sensibility of the parts affected. Goulard water, hydrosulphureous baths, and light frictions with camphor and calomel, mixed with lard so as to make an ointment, moderate exercise, the part being properly supported by bandages and laced stockings, if it is the foot.

Treatment of the fourth period, when there is disorganization of the inflamed parts, and other accidents.—The further we advance in the different periods of this complaint, the treatment becomes the more difficult and uncertain. When chronic inflammation has disorganized the white tissues,—when the ligaments, tendons, and synovial sheaths are already converted into a white mass, homogeneous and lardaceous, there scarcely remains any hope either of restoring these parts, or of stopping the progress of this fatal disorganization. When this alteration, generally known by the name of white swelling, is recent, and the health of the person good, the case sometimes ends favourably; but, if it is of long standing and deep seated, with lancinating pains, and particularly if the patient be scrofulous, all attempts at cure are useless: we can only palliate. Many means have been recommended in this fourth stage, as any thing which has for its object to destroy a deep-seated irritation by a superficial one, either of the skin or subcutaneous cellular substance, such as ammoniacal poultices, spirituous liniments, blisters, setons, moxas, cauteries, &c. When these means have succeeded, and there no longer is deep-seated inflammation, and no disposition to relapse, even under these favourable circumstances, too strong applications have reproduced the deep-seated inflammation by the extension of the superficial one, and have hastened the progress of a disorganization which had perhaps been stopped in its course. Judge then, what disorders these applications must occasion when applied to parts already inflamed and the seat of the white swelling. The pain speedily becomes insupportable, swelling and heat come on; sometimes suppuration in the interior of the joint, with hectic fever, &c. till death closes the scene. We have seen subjects in the flower of their age, and whose general health did not appear much changed, perish within twenty or thirty days from the time of applying these means. One must, then, never lose sight of these results, and dread them still, even when the joint appears the most favourably disposed to stand without injury the use of moxa, setons, blisters, &c., since the inflammation caused by these means may extend to the subjacent tissues, and there bring on the symptoms which have only been lulled.

If, then, there is any hope of cure, it is more prudent and certain to employ those means recommended in the third period, modifying them always according to the circumstances: rest, partial bleedings from the part, emollient and calming topical applications, and, lastly, gentle resolvents, ought to form the basis of the treatment. If these means will not do, no other will; the disease is incurable, and the complaint goes on from bad to worse, till he either dies or submits to an operation by which the affected parts are removed. But this amputation is not always practicable, either from

the situation of the complaint, (as, for instance, when seated in the pelvic articulation, or in the vertebral canal,) and also from various circumstances, which may contra-indicate its employment. It may then be useful to point out some fundamental rules in those cases where we might save a patient by sacrificing a part for the preservation of the whole, and those in which the operation would only add new sufferings without the chance of benefit. Now, where the patient has had his constitution generally and extensively altered before the local accident which calls for the amputation, it would not only be useless to propose amputation, but it would do harm. This then is one case where we should not amputate.

When the patient has had pretty good health before the accident, and chronic suppuration, with sanious absorption which usually accompanies it, has brought on a constitutional derangement, "*cacochymie*," attended with dyspnœa, dry cough, especially when the patient makes a deep inspiration or the chest is struck upon, colliquative diarrhœa, slow fever, partial night sweats;—amputation under these circumstances might remove the first cause of the symptoms, but will not destroy the effects produced on the respiratory or digestive organs. These are not capable of retrograding, because they depend not only on the chronic inflammation of the tissues affected, but also on the organic lesions produced in these tissues by prolonged inflammation. This then is another case unfit for amputation.

When there is a decided scrofulous taint in the constitution, it should forbid the operation.

When a patient is originally of a sound constitution, and experiences a deep-seated chronic inflammation, with disorganization, in one of the principal joints, as the foot, knee, wrist, or elbow, in consequence of a local accident, such as a bruise, a wound, or a sprain, if that patient is nearly free from fever, the digestive organs in good order, the chest sound, and none of the internal viscera are affected, even although he should be exceedingly reduced in flesh and strength, we must not despair; for, by removing the affected part, we remove the focus of disease. This then is a case in which amputation is prudent and necessary, and such patients will recover sooner from amputation than those where they are in high health when the operation is performed; for, in the first case, the system being reduced to a kind of languor and inertness by its losses and sufferings, does not present those febrile and inflammatory reactions, which in the other may sometimes compromise the success of the operation, and cause a fatal termination. —*Revue Medicale.*

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OBSERVATIONS ON FEVER. Addressed to a Medical Friend, by Dr. Bow, of Alnwick.

(*Continued from Vol. II. page* 16.)

In some work or other I have read as the opinion of its author, that the animal system was possessed of one dose of vitality, which could not become superabundant in one part without a proportionate deficiency in some other part, and vice versa. Such a law, I suspect, obtains with nervous influence. If there be too great a determination of it to one particular point or surface, it will be proportionally withheld from other parts; and if we diminish the sensibility of a part, so that usual impressions are not recognised, the usual force of influence is not transmitted to such part, and consequently it is transmitted to some other part or parts in greater force. If to the healthy subject we administer a brisk cathartic, we by it cause a determination of nervous influence greater than natural to the gut; therefore, during the operation of the medicine, there will be felt a greater or less degree of muscular debility and of coldness of the surface, feelings plainly arising from deficiency of nervous influence, owing to the demand for it elsewhere. Although the *general* action induced by a cathartic be sedative, the cathartic itself is a stimulant, and directly acts as such. On the other hand, if we administer a moderate dose of opium, we thereby diminish the sensibility of the stomach, and consequently the usual force of nervous influence is not elicited; it is, therefore, transmitted else where in greater force, giving rise to hilarity of mind, increase in the force and frequency of the pulse, increased warmth of the surface, with moisture of the skin; yet, though these symptoms be demonstrative of excitation, they are not the immediate effects of the opiate. Opium is a direct sedative, acting upon the nervous extremities, producing a kind of torpor of them, by which they are more or less unfitted as instruments of transmission of impression to, or of influence from, the nervous centres. If the dose of opium be increased, there is torpor communicated to the brain itself, by which it becomes unconscious of all impressions, and sleep is the result. If opium act by diminishing the sensibility of the surface to which it is applied when administered internally, and if, in consequence of this effect, there be a greater determination of nervous influence to the surface of the body, we ought reasonably to expect that its external application would, by diminishing the sensibility of the skin, cause a greater determination of nervous influence to internal organs; and this we find to be the case. In debilitated habits, I invariably find that opium applied externally acts as a laxative, and I am not only in the habit of so applying it with the view of moving the bowels, but also of improving the appetite; effects very different, indeed, from those resulting from its natural administration.

If a patient labouring under typhus fever be left to himself, or if the treatment during the first stage, and three first days of the second stage, be inertly conducted, and if nature do not assist him by some critical discharge, then is he in danger of ulceration of the mucous and muscular coats of the intestines; a circumstance which happens so frequently, at least on the continent, as to have given rise to the celebrated though delusive

doctrine of Broussais. I have said that nervous energy generally begins to decline on or after the third day of the second stage, after which time, if the irritation on the surface of the body continue, nervous influence will still continue to flow to the skin, though actually not in such great force as on the preceding days of the same stage, yet in greater force in proportion to that transmitted to other parts; for we find that, the weaker the patient, the more easily is the stream of nervous influence directed to or from any particular surface. Therefore, the irritation of the surface continuing, and as now nervous influence is more easily diverted, internal organs are in a greater degree deprived of it. And that the mucous membrane of the intestines should be the part to suffer in consequence of the diminished supply, is just what might have been expected from the distribution of the branches of the sympathetic nerves; for, although these nerves send branches to every part of the body, their principal expenditure is on these two extensive secreting surfaces, the skin and mucous membrane of the bowels: hence an agent acting on the one surface must necessarily induce a contrary action on the other. Indeed, either of these surfaces is so liable to be affected by causes operating on the other as to be a circumstance of daily observation. Nervous influence being then almost wholly diverted from the mucous surface of the intestines, infarction of its follicles, venous congestions, ulcerations, and gangrene follow. I have not been present at any dissection where the ulceration alluded to has been witnessed, nor have I seen a more accurate description of it than that by Dr. Hewett, in the London Medical and Physical Journal for August and September, 1826; and I think whoever peruses the cases and observations there given will at once recognise disorganization from want of action rather than ulceration consequent to inflammation. As a proof that this want of action arises from the determination of nervous influence to the surface, owing to the superior sensibility of the skin, I may observe that such appearances may be found to follow a preternatural determination of influence to the surface, however caused; for unless upon this principle, it would be difficult to explain the appearances found by Dr. Hewett in the young woman who died in consequence of extensive burn. If this view of the subject be correct, the conclusion to be drawn from it is of the utmost importance in practice. With the view of turning the stream of nervous influence inwardly, I frequently employ opium externally during the second stage of fever, and from that ever get what I expected, viz. an improved state of the stomach and in the appearance of the tongue; and as I must declare my astonishment at the rapid recoveries of some, may I not believe that, by determining nervous influence to the intestines, I have unwittingly accomplished a more essential point, that of arresting or preventing the ulcerative disorganization of the mucous coat of the intestine?

The perusal of Mr. Ward's communications to the first and some of the succeeding volumes of the London Medical and Physical Journal led me to the employment of opium externally in fevers, and I know not why the cases and facts stated by him have not urged the generality of practitioners to adopt the practice, unless, indeed, the supposed *modus operandi* of opium. For if opium acted only on the system after having gained the circulation, the effects following its exhibition would be the same in every instance. But, as this is not the case, there being a very sensible difference in the effects of its external application, and as the mere mode of its introduction, whether by lymphatics, lacteals, or otherwise, is inadequate to explain the difference, perhaps this difference may be supposed, by those who favour the idea of absorption, to rest more on fancy than on truth.

In prolonged fevers, the low muttering delirum, the restlessness, and the denied sleep, are, I think, caused by the deficient secretion of the fluid destined to lubricate the meninges of the brain. If such be the case, we can readily discern why we may succeed in procuring quiet sleep by opium externally applied, when, internally administered, it might aggravate the symptoms we mean to remove. For, by applying opium to the skin, we diminish its sensibility, we produce a torpor of the extremities of the sentient nerves, by which a preternatural determination of nervous influence to the surface is prevented. This nervous influence being now determined inwards to parts much in need of it, the lubricating secretions become more copious, irritation is diminished, and sleep follows.

But it is not the secretions only which become more copious or more perfect in consequence of the morbid determination of nervous influence to the skin being put a stop to; for the patient awakes with an appetite for the food which before he loathed, proving that the gastric fluid hath become more copious or more perfect. The mahogany colour of his cheek is changed to a brighter red, proving that the change of the blood in the lungs hath become more perfect. His pulse, which was running towards an hundred and twenty, weak and irregular, is now regular and below an hundred, proving that the determination of nervous influence to the heart is now sufficient to regulate its action; although this difference in the action of the heart may, in some measure, proceed from the more perfect arterialization of the blood.

To understand why opium might aggravate the symptoms we intended it to remove, when given internally, I have only to refer you to what I have said of its *modus operandi* in the healthy subject. It determines nervous influence to the surface of the body. Now, the symptoms we wish to remove are owing in a great measure, to a morbid determination of nervous influence to the surface. If by the greatness of the dose we succeed in procuring sleep, it is far from being quiet or sound, and the patient awakes unrefreshed: nay, it is

proverbial that, in such cases, benefit seldom arises from sleep effected by opium. Insensibly have I been led to make the above and many other remarks not immediately hinging on my subject, yet, as I conceive they are not altogether out of place, I trust you may also be of that opinion.

I will now propose to you the following condensed hypothesis, which will at one glimpse give you my idea of the chain of actions which constitutes fever:

Impaired energy and functional disorder of the nervous system, and, in consequence, prostration of strength and imperfect secretion generally; irritation from the imperfect products of secretion, and, in consequence, increased nervous energy and sense of heat; absorption of the imperfect products, and, in consequence, inordinate vascular action.

The first link of the above, as you must remark, is also the first link of the Cullenian theory. I have employed the expression, "nervous system" instead of brain, and perhaps such alteration was unnecessary; but of that more hereafter. I have added "functional disorder," because, by doing so, I think I meet one objection which has been started, viz. that diminished energy of the brain is not necessarily followed by fever. I can readily suppose that the energy of the brain may be impaired to a degree even greater than that necessary to produce fever, without fever being the result; but this impairment must be so gradual as at first to effect the secretions but triflingly, and then, instead of fever, we have, according to circumstances, a disease to be found in the class Cachexia. I regret I can go no further with Cullen; for I think it is needless to call in the aid of an ideal power in the animal economy to perform indirectly that which we can conceive to be performed directly by a simple and natural process; a process which we often artificially imitate to effect the same end.

One of the functions of the nervous system being secretion, or rather (to make use of language which may not offend an anti-neurologist,) the brain having an influence over the secretory apparatus, I have noted as a consequence of impaired energy, imperfect secretion generally; and, as I have already said, it is owing to the imperfect state of the secretions throughout the body, that a hot stage follows the cold one. The irritation produced by these imperfect products is the cause of the reaction, and in the greater sensibility of the skin we have the reason why the reaction is first observable on the surface. If imperfect secretion generally be admitted as a consequence of impaired nervous energy, it follows that the imperfect products must not only irritate, as would foreign matter, the nervous extremities with which they come in contact, but also that they must be absorbed and enter the circulation likewise in the shape of foreign matter. And if these imperfect products be sufficient to irritate, and to produce inconvenience, as soon as they are separated from the blood, in the parts with which they come in contact, it is but reasonable to conclude that, when absorbed, they will excite, by irritation, the heart and arteries to increased action.

It is impossible for me to foresee all the objections you may start to the above hypothesis, for, as the father is frequently the only one who is blind not only to the moral, but even to the physical, defects of his child, so I, aware of my partiality, must look to you to point to its failings: it fails not, however, in simplicity, and it speaks neither of unmeaning sympathies, of morbid associations, nor of imagined *vires medicatrices naturæ*.

As I am one of those who believe that all fevers are produced by the same proximate cause, I meant here to show the adaptation of the above theory (if I may so name it) to some particular forms of fever; but, with a view of bringing this communication to an end, and upon the consideration that, if it explain the phenomena of the common continued fever of this country, it will be equally explanatory of the leading characters of all fevers, I will reserve what I have to say for some future epistle. Yet there is one form of fever which I cannot avoid adverting to in this place, inasmuch as it stands recorded to this day as an insuperable objection to the Cullenian theory; to the very stage which alone is correct, and which I have borrowed as the basis of my own. It is said that in symptomatic fever there are no symptoms of impaired energy of the brain. Be it so; and partly owing to that it is that I have said "nervous system" in my condensed view, instead of "brain," as written by Cullen. No acute inflammation can possibly happen in any part of the body, unless there be a preternatural determination of nervous influence to the part; consequently, there must be a deficiency of it in other parts of the body, and, owing to this deficiency, the secretions of such parts are imperfectly produced. These imperfect products at length irritate, are absorbed, and fever established. Thus, though this fever does not commence with symptoms of depression so marked as to constitute signs of impaired energy of the brain; yet I presume it will not be denied that there is disorder of the nervous system, consisting in impaired energy generally, the increased local determination being its remote cause. We have now a fever corresponding in its leading features to the stage of excitement in idiopathic fever. This fever is not of long continuance, for the absorbed offending matter, after a time, is determined to, and finds an outlet at, the wound or injured part, in the form of pus. The symptomatic fever I allude to is that which alone should be called so, viz. that which surgeons recognise as such.

The fevers said to be produced by the local affections called phlegmasiæ is, for the most part, if not always, an idiopathic fever. It is an inflammatory fever in which, owing to certain causes, an irregular distribution of nervous influence gives rise to topical inflammation. In the same way topical inflammation

obtains in typhus, but here we never think of calling the fever symptomatic.

ERYSIPELAS.

To the Editors of the London Medical Gazette.

GENTLEMEN,—Some recent interesting discussions about Erysipelas, induce me to submit a sketch of my own experience and meditations upon that important subject. Wherever my doctrines or practice differ from the common routine, they have been sanctioned by mature pathological considerations, and attended with a satisfactory proportion of success.

The professional history of Erysipelas affords a remarkable example of the necessary alliance between physic and surgery; since it embraces questions of vital consequence, alike affecting the constitutional functions of the human frame, and particular parts.

Those physicians who assume to understand local and external diseases from general views of constitutional errors; or surgeons who undertake the charge of *apparently* local maladies, without a competent knowledge of their dependence on, or connexion with the whole living system, may be regarded as equally unfit to direct the treatment of Erysipelas. I take it for granted, that the majority of the faculty are agreed as to the constitutional source of Erysipelas; for every unprejudiced observer may easily detect the coincidence of a derangement in the animal system, whenever the outward demonstration of that disease becomes unquestionable. The numerous descriptions of Erysipelas, adopted by nosologists, are perhaps more curious than useful for practical purposes; while they inveigle the student into unprofitable technicalities, to the detriment of a better occupation, (id est) upon the evidence of conspiring symptoms.

The healing art is intricate because of its multitudinous facts, and complex rationale: its purposes are also often uncertain, from the difficulty of discriminating those signs of diseases which are infallible and decisive from such as are of subordinate value.

If the diagnosis of each disease could be accurately defined, and the specific remedies assuredly marked out, then the historical precedents of the art would, if faithfully displayed, suffice to make good empirical practitioners; but the records of twenty centuries exhibit the precepts and laws of medicine as unsettled as they were in the days of Hippocrates. It has, therefore, become expedient to attempt to establish this deeply responsible vocation upon scientific principles, by enlarging and spreading the anatomical knowledge of animal structures generally; and by chemical researches, as to the essential constituent elements of those organic compositions which are peculiarly placed within the dominion of life. Under a wisely-founded physiology, the surest systems of pathology and therapeutics may be formed by legitimate inductions, showing the necessary dependencies between the mechanical structures, compositions, and functions of living bodies; the several errors happening in their actions, textures, or constituent materials; and finally, by philosophic reasoning, to point out the modus operandi of remedies, and a scientific way to further improvements.

After this preliminary exposition, I may venture, with more propriety, to address myself to professional scholars, and to those who desire to see the healing art promoted by a closer union with the exact sciences.

Erysipelas appears to be a humoral disease, arising from vitiated blood: it is occasionally epidemic, but more commonly sporadic; and even when seeming to be epidemic, the exciting cause may be often discovered to be some unwholesome food, beverage, or contaminated local atmosphere. Assuredly the common source of Erysipelas is improper diet, through which the blood is supplied with crude or noxious materials; and, although the attack is vulgarly ascribed to "*catching cold*," I am fully convinced that such excitement only gives activity to a previously existing morbific humour. Those violent eruptions, vulgarly, but not illogically, called surfeits, are the immediate consequences of one pernicious meal; and they generally display Erysipelas in its most malignant character; while moderate and habitual errors in diet mitigate the acuteness of the disease, and keep the patient in a state of continued liability to relapses, whenever exposed to any extraordinary vicissitude, and which thence assume either a mild or chronic type.

It must be allowed that Erysipelas is frequently first observed as a local affection, and apparently limited to the corion or true skin; but the eruption is always preceded by some derangement in the alimentary functions, and for the most part by loss of appetite, nausea, and constipation, followed by the other common signs of incipient fever. The devoted part first becomes hot, and feels as if influenced by the radient heat of a fire; an itching or pricking sensation follows, and soon afterwards, under an aggravation of those symptoms, vesications arise, like those produced by artificial blistering. In this local inflammation there is seldom the same degree of redness or tumescence as in common inflammation. The colour of the serosity under the detached cuticle is the same as that of the serum of the blood in the affected individual; but if it happens to be more yellow than is natural, some practitioners then assign the chief cause of the disease to the liver, and hastily resort to mercurials. Perhaps all the varieties of Erysipelas ought to be ascribed to the several deviations in the acrimony, or in the quantity of the exuding morbid humour, and in some degree to the constitutional habit of the patient. If Erysipelas were essentially dependant on disease of the liver, it would necessarily be a common attendant on jaundice; but experience shows the contrary.

According to my observation, the disorders of the liver are rather the consequences of morbid states of the stomach than their antecedents or causes. In every chain of intricate events, it is of leading importance to discover the *constant* order of the phenomena, and in no profession is it more difficult, or of more portentous influence, than in the healing art. Having often, during a long professional life, detected an intimate connexion between Erysipelas and previous crudities in the stomach, (in many instances those were of the acid kind, traceable to acidifiable diet, such as oleaginous or tainted fish, raw vegetables, fruits, or sweets) I was thence induced to examine the serosity first effused in Erysipelatous vesications, and always found it to contain a free acid.

Those opinions have been supported by the testimony of several modern writers, who extol the efficacy of ammonia as a medicinal remedy in Erysipelas. Habits of pathological meditation, added to extensive experience, have lately induced me to think freely upon the nature of many diseases, and to recollect former evidences of the juvantia and the lædentia of practice. My views of Erysipelas, thus matured, are, that it is a humoral and constitutional inflammatory disease, occasioned by alimentary crudities; and because certain vegetable acids, and acidifiable viands, are often the notorious antecedents of the disease. I believe, as before stated, that the dominant error in the morbid fluids is acid. The causes which determine constitutional diseases to fall especially upon particular parts, are not well understood, but if we regard the corium as a compacted reticular tissue, analagous to the general cellular membrane, with only additional secretory or excretory vessels, we may class them together as serous membranes; and to those structures Erysipelas is chiefly directed. In its local habitudes Erysipelas is prone to excessive diffusion, owing to the absence of that adhesive boundary which limits common inflammation; and its remarkable tendency to sphacelate may be attributable to the destructive acrimony of the morbid humour, favoured by a constitutional debility, incident to the malady. From long continued opportunities of anatomical inspections, I am led to conclude that the frequent mortality attaching to Erysipelas must be ascribed to its untractable character, but I am also well assured that Erysipelatous inflammation more often attacks the great continuous serous membranes of internal cavities than the profession are taught to believe. To this, I fear, we may justly assign the many unexpected failures in the treatment of peritoneal and pleuritic inflammations, when they are wholly intrusted to sanguineous depletion. Those inflammatory affections which are purely vascular errors, united with plethora, may be always subdued by bleeding, purging, and abstinence; but not so if the whole system is vitiated by noxious fluids, derived from unwholesome diet, from imperfect digestion, or from undue retention of corrupted fœces. After estimating the impure atmosphere of large cities, and the numerous unhealthy customs of their inhabitants, we need not wonder at the fatal results of many surgical operations, and of diseases in the metropolis, when compared with country practice.

Erysipelas may occur in either feeble or plethoric habits, and consequently demands a plan of treatment suited to the existing condition of the patient. I have, however, so often seen dangerous inflammation of the vein after bleeding in this disease, that I prefer to diminish any morbid excess in the volume of blood by cupping. When the attack has been sudden, and the stomach is known to be loaded with crude food, an emetic of ipecacuanha is advisable, and it should be immediately followed by a cleansing cathartic, given in reiterated doses until the lower bowels are thoroughly emptied. If the patient be of a full habit, and the pulse ample, abstinence from food and drink should be recommended, because the functions of the stomach are especially deteriorated in Erysipelas, and diluents promote all the alimentary fermentations. Mercurial purgatives are objectionable, because they produce putrescent excretions; and also, because of the uncertainty as to their injurious constitutional effects on certain individuals. Saline cathartics seldom cleanse the bowels effectually, and they mischievously augment the fluidity of the aliment.

The purgative which I ordinarily advise is composed of one drachm of powdered jalap, two scruples of sulphate of potash, and half a drachm of carbonate of soda, mixed with eight ounces of infusion of senna; of this two or three table-spoonsful should be taken every seond or third hour, until copious and cleansing evacuations are procured. From a conviction that alimentary acidity is generally prevalent and requires to be subdued, I give from ten to sixteen grains of sub-carbonate of soda every four hours, in barley-water. If the mouth is parched, soda water proves very refreshing. Where great debility is obvious, the carbonate of ammonia, in doses of from five to eight grains, should be preferred to soda; and three or four grains of aromatic powder may be joined with each dose. The oily spices contained in the aromatic confection often prove offensive, and so do the distilled waters, impregnated with essential oils. Opium has been held in considerable repute as a remedy in Erysipelas, but the injudicious employment of that potent drug has seemed to me so often hurtful, that I consider its administration demands much circumspection, and that it is seldom proper.

Similar objections may be urged against the heedless prescription of wine, malt liquors, or venous spirits; and perhaps the notorious mortality among Erysipelatous patients may be justly imputed to a doctrine which excludes Erysipelas from the class of inflammatory diseases, and puts forth the mystical phantom of diminished vitality. The local treatment of Erysipelas is subordinate to the removal of the exciting cause, and to the

restoration of constitutional health; it is, however, the especial province of surgeons to watch its visible changes, and to make suitable applications. When hot excoriations have succeeded to broken vesications, simple lime water is a soothing remedy; it should be used through the medium of soft linen, and often renewed. When neither pain nor heat attend the eruption, a lotion composed of twenty grains of carbonate of ammonia, dissolved in eight ounces of water, may be employed in the place of lime water.

When drying crustations occur, the part may be beneficially covered with the thin smooth oiled silk, used by umbrella makers, and which will secure a moist skin, by preventing evaporation. If the subcutaneous tissue be invaded by the morbid secretion, and destruction is spreading through that extensive connecting medium, free incisions ought to be made in the most prominent or dependant parts, with the caution to avoid the exposure of the articular ligaments and tendons; and also under the prudent avoidance of extending wounds beyond the hope of healing, or which might add a new danger from their excessive length. Warm fomentations promote suppuration, but poultices are often more troublesome than useful, from their pressure. After sphacelus has become unquestionable, and putridity invades the part, we are happily now possessed of an effectual antiseptic, which I regard as one of the most valuable contributions of modern chemical science to the healing art;—I mean the chloride of lime. This estimable compound arrests the putrefactive fermentation; by which, not only the local condition of the mortified parts, but the general health and comfort of the patient, are essentially benefited.

Whether Erysipelas appears on the surface, or is suspected to have invaded internal parts, it is to be considered an insidious and dangerous disease, always requiring the watchful care and skill of the practitioner. If, however, a total reliance is placed on drugs, without directing the diet, little success will attend such limited endeavours. I have witnessed many fatal relapses of Erysipelas occasioned by the neglect or misdirection of diet; and I believe that the frequent returns of the disease are entirely attributable to improper diet. It is vexatiously absurd to see rows of alkaline draughts, and a beverage of lemonade, placed at the same time before a sick patient, and to hear that the doctor advised veal broth (which always turns sour on a weak stomach,) while the patient was labouring under a diseased acidity, for which the appropriate chemical antidotes were at the same time ordered. If I have been occasionally more fortunate than my brethren, in some dangerous cases, I am willing to assign the chief merit to a rational plan of diet, always carefully prescribed to correspond with the passing state of the patient, and with the medicinal remedies.

Gentlemen, I have thus far trespassed on your forbearance, with a recital from my personal experience and cogitations, without noticing those historical records which would have led to endless disputation, or involve this subject in unprofitable wrangling. The scope of medical science is hourly expanding, and an inquisitive public anxiously expect the establishment and exposition of its unmistified rational practice. My utmost hope from this desultory sketch, is to awaken the exertions of medical philosophers, and, through them, to improve and spread the collateral and direct sciences of our art. If neighbouring nations have taken a temporary lead in physiology, let us avail ourselves of their industry and ingenuity, and unite our efforts to build up a system of pathology and of therapeutics, which may command the respect, and fix the confidence, of future ages.

Gentlemen,
Your obedient servant,
ANTHONY CARLISLE.

From the London Medical Repository and Review.

CASES ILLUSTRATING THE ASSISTANCE AFFORDED BY THE STETHOSCOPE *in instances of Doubtful Pregnancy.*

By F. G. PROBART, M.D. F.L.S.; late Senior President of the Royal Medical Society of Edinburgh; one of the Physicians to the Suffolk County Hospital, at Bury St. Edmunds, &c.

To the Editors of the London Medical Repository.

Gentlemen—The interesting and important discovery of M. Kergaradec, of Paris, of the unequivocal signs furnished by means of auscultation in some cases of otherwise doubtful pregnancy, has hitherto attracted in this country but a small share of that attention which has been justly paid to stethoscopic investigations. Should you think the following illustrations of M. Kergaradec's discovery entitled to the honour of public perusal, I will beg the favour of you to dispose of them in any way you may judge best suited to the subject.

I am, Gentlemen,
Your most obedient servant,
F. G. P.

Bury St. Edmunds, April 11th, 1828.

CASE I.—A young woman, housemaid in a family of great respectability, applied to me for advice under the following circumstances. She had not menstruated for five months, having, she believed, taken cold the last time she was unwell. She complained of pain and swelling in the hypogastric region; her bowels were costive; she had no appetite, and felt general uneasiness. The hypogastrium, felt through the dress, was tense and unyielding, and the patient affirmed that very slight pressure occasioned her considerable pain. I suspected pregnancy; but as she negatived the possibility of it, some leeches were directed to be applied to the lower belly, a mild aperient, and rest. On the following day I was request-

ed by the mistress to visit the girl, and arriving at the moment the leeches were being applied, I availed myself of so excellent an opportunity for a stethoscopic examination. The "*bruit placentaire*" was instantly detected about midway between the umbilicus and superior anterior spinous process of the ilium; and between the former and pubis; the heart's contraction in the fœtus beating, in frequency, double that of the mother. I communicated this result of my examination to the girl, but she repeatedly, and most unequivocally, denied that she could be pregnant; at length, however, after remonstrating with her on the absurdity of vainly endeavouring to conceal that which a very short time must inevitably disclose, she acknowledged having "kept company" with a man-servant, in the house; and I was now permitted to acquaint her mistress with her real state. The girl left her place the following day, and was soon after delivered.

Case II.—A married woman, from a neighbouring village, of emaciated appearance, the mother already of two children, consulted me on the state of her health, which another gentleman in the profession had represented as hopeless, from an opinion that she was "in a deep decline." There were considerable difficulty of breathing, some cough, occasional perspirations and debility. By means of the stethoscope, however, I found the lungs healthy, but the heart was beating with a vastly augmented sound, and audible all over the chest, as well posteriorly as anteriorly, but unaccompanied by any preternatural impulse. I concluded, therefore, that the above symptoms were the consequences of simple dilatation of the heart, and a suitable treatment was adopted, from which the poor woman derived so much relief, that she believed herself cured. She very soon again became alarmed at a gradual increase in the size of her belly, which her neighbours persuaded her arose from dropsy; and she, therefore, again presented herself to me. Being engaged at the time with other patients, I did not enter into a minute inquiry; and, taking it for granted that there was effusion, a natural sequela of the affection of the heart, I prescribed a combination of aperients and diuretics. Her size still increasing, she determined to pay me another visit; and, now doubting the accuracy of my former hasty diagnosis, as to the effusion, I ausculated the abdomen, and in a few minutes discovered the sounds of a fœtal circulation. Willing as this person evidently was to believe the information I now communicated, she could not be convinced of the fact, as she had not felt the motion of the child, nor had experienced any of those sensations that marked her former pregnancies. Before her confinement, however, which happened about ten weeks subsequently, she was satisfied of its truth, and had made the usual preparations.

Case III.—A young woman was admitted under my care, into the Suffolk Hospital, supposed to have ovarian dropsy. In the hurry attendant upon admitting patients, I made no examination at the moment, but desired the woman to remain in bed the following morning until I had made my visit, with a view to more accurate observation. The account given of herself was, that she had suffered with her present complaints for two years, during which time she had been severally treated by a physician and two surgeons. There was apparent tenderness in the hypogastric region, upon slight pressure; and a spherical tumour was very palpable, extending from the pubis to the umbilicus, which so very nearly resembled the pregnant uterus about the seventh month, that I, without hesitation, put the question as to the possibility of pregnancy. The girl gave me the most solemn assurances it could not be, and said that, in consequence of her appearance, she had more than once in the course of the last two years been so charged by her neighbours; and that so lately as only a fortnight ago, this report having again spread through the village, she, for the satisfaction of her mother and friends, submitted to an examination by the medical gentlemen who attended the parish, and who then declared that she was not pregnant. Still, however, very doubtful of all this, I had recourse to the "*Experimentum crucis*," when my suspicions were immediately realized in the existence of a loud "*bruit placentaire*," with that still less equivocal sign, the action of a fœtal heart. The girl, notwithstanding the positive manner in which I now insisted upon her situation, persevered for a long time in affirming her innocence; but ultimately she acknowledged "an acquaintance" with a young man in the village: she was nevertheless sceptical on the score of pregnancy, as she continued to feel exactly as she had done for two years back. Her mother called at my house the next day, before going to see her daughter at the hospital, to hear my opinion of the latter, and manifested a disposition to quarrel with me on hearing the unwelcome tidings I communicated. The patient returned home with her mother, and was, a month after, delivered of a still-born child.

There cannot, I think, be any doubt that the subject of this example was ignorant of her situation; for it is quite true that she had been ailing for two years; that she had menstruated but once during that time, which event appears to have happened a short time before the "acquaintance," and that the apothecary had declared her case not to be one of pregnancy.

From the Lancet.

A CASE WHERE THE RIGHT CAROTID ARTERY WAS SUCCESSFULLY TIED, *on the distal side of a large Aneurismal Tumour.* By George Bushe, M.D. of the Royal College of Surgeons in Ireland, and Assistant Surgeon to the Forces.*

Mary Covis, æt. 36, in March, 1826, observ-

* A short account of this case is contained in the Journal of Foreign Medicine, Vol. i. p. 381.

ed a pulsating tumour about the size of a small hen's egg, in the upper part of the lower third of the right side of the neck, corresponding to the situation of the carotid artery, which, to the present period, (Sept. 2d, 1827) has progressively enlarged. A prominent tumour now extends from the clavicle on the right side, upwards to near the os hyoides, pressing on the trachea, and bearing it off to the opposite side, and passing under the sterno-mastoid muscle (which is stretched over it) to nearly an inch beyond its outer border. The integuments of this side of the neck, particularly in front of the tumour, are thin, shining, and loaded with varicose veins. The tumour is firm at its circumference, but soft in its centre, and, by pressure, its size can be diminished; it pulsates strongly, the throbs being synchronous with those of the left ventricle of the heart. The stethoscope indicates it to be purely aneurismal, and, by this instrument, the left side of the heart appears to be acting on an increased quantity of blood, with more force than natural. The poor woman is much emaciated, and her deglutition and respiration, which have been much impaired for some months, are now almost annihilated.

6. Dr. Clarke, physician to the forces; staff-surgeons Burton, Clarke, and Daun, with other officers of the medical staff, and most of the neighbouring practitioners, assembled this day; and, after considering the case, were of opinion that an operation would be fruitless, in consequence of the advanced stage of the disease, and moreover, from the magnitude of the tumour, it would be impossible to find the carotid artery.

11. This morning, my medical friends wrote to me saying, "That as Covis had not swallowed any thing for the last nine days, her respiration was becoming more alarming, and her voice had almost failed her, added to her own supplications and the entreaties of her friends, they wished that I might now attempt to secure the carotid on the distal side of the aneurism." Accordingly, at three o'clock, P. M. I proceeded as follows:—The patient being placed on a table, with her head and shoulders slightly elevated, I endeavoured to gain as much space as possible, by bending her neck to the opposite side; but this I found totally impracticable, from the dreadful suffering and sense of immediate suffocation she experienced on the slightest attempt to accomplish this end; therefore, with her head rather inclined to the diseased side, I commenced an incision at the angle of the jaw, (which was very prominent,) and carried it obliquely downwards and forwards for two inches, in a direction corresponding to the anterior edge of the sterno-mastoid muscle; by which the external jugular vein was exposed, crossing the centre of the wound; and fearing troublesome hæmorrhage from its division, I included it within two ligatures, and then cut between them; the cervical fascia and platysma being dissected off, the anterior edge of the sterno-mastoid was readily brought into view, by the side of which lay a tortuous plexus of dilated veins; these being pushed off with the handle of the knife, I endeavoured to divaricate the lips of the wound with brass retractors, but from the tense state of the sterno-mastoid muscle, I found it almost impossible; and the slightest attempt produced much pain and more laboured respiration, with swelling of the cervical veins, and, from these difficulties, added to the great depth at which the carotid lay, in consequence of the magnitude of the tumour forcing all the parts out of their natural situation, I found it necessary to divide the integuments on the upper part of the tumour to the extent of an inch, and by this expedient I was enabled to lacerate the cellular tissue in the neighbourhood of the hyoides, which bone I at length reached, and found that it was situated between one and a half and two inches from the surface; then, by a little manipulation, I succeeded in pushing the tumour somewhat downwards, and to the opposite side, thus exposing the sheath of the vessels, which, when I had removed the descendens noni to the outer side, was opened in the usual manner; but, as far as I could judge in the deep and bloody cavity, with the great impediment of an enormous internal jugular vein. The portion of the artery immediately above the aneurism was dilated, and not more than half an inch of its extremity appeared sound, on which, with a common silver probe, I placed a single silk ligature. The wound was lightly dressed, and the patient put to bed, not having been more than fifteen minutes on the table. Before I tied the ligature, I allowed many of the gentlemen present to examine if the artery was really included; as I feared a difference of opinion might exist as to my veracity, a short time before having read in the Lancet a lecture of Mr. Liston's, in which he scouted the idea of Mr. Wardrop's ever having placed a ligature on the carotid, beyond an aneurismal sac.

Immediately on the tightening of the ligature, Dr. Clark observed to me, that the tumour was more soft and less prominent than before the operation; and this, to those who heard the observation, and myself, was obvious enough; but, if I recollect well, a similar change was observed in the case operated on by Mr. Lambert. In the commencement of the case it may be read, that the poor woman had not swallowed any thing for nine days; that her respiration was particularly distressing, and that her voice had almost failed her; but the reader will not be a little surprised when I say, that before the wound was dressed, she swallowed nearly ten ounces of wine and water, and such was her relief, that she actually thanked me for the benefit I had conferred on her, and, if allowed, would have prolonged the conversation.

So far I have copied verbatim from notes taken as the circumstances occurred; but the operation being safely executed, a continuation of the details, after this manner, can be no more interesting; and as long narrations never fail to exhaust the most studious, I have thought proper to condense the remainder of

this case. Until the 14th day she required four small bleedings, to keep down arterial action, and ease pain of the right side of the heart; gentle enemata were employed to regulate her bowels; her respiration and deglutition rapidly improved; her food consisted of strong beef tea and jelly, and she had easy nights, without the slightest tendency to orthopnœa, from which she had suffered much previous to the operation; the tumour rapidly decreased, and its pulsations became more weak. The ligature was cast off on the 19th day,* and the wound was healed on the 27th, at which period she left her bed, the tumour being reduced to one half its bulk, and almost free from pulsation.

At the present time, April 19th, she is in perfect health; there is scarcely a remnant of the tumour, the inordinate action of the heart has ceased, and her respiration and deglutition are natural.

I shall now conclude this brief paper with a few concise observations which perhaps may not be useless. Dilatation of the vessel may have been the first morbid change in the above case; but when I saw the woman, there was a sac communicating with the artery, as described by Scarpa. The carotid was undoubtedly secured on the distal side of the tumour; and I never tied, or saw an artery tied, on the cardiac side of an aneurism, where the cure was more perfect. I have not seen any of Mr. Wardrop's cases, nor that of Mr. Lambert, but I have read of them all in the Lancet; and I feel convinced that the Editor of that periodical has performed a public good, in recommending the ligature of arteries on the distal side of aneurisms, in cases where it is impossible to follow the precepts of J. Hunter. For the last six months I have kept this case from the public eye, that I might speak firmly and without contradiction as to its termination; and though it is foreign to my occupation in life, and my desire also, to litigate on any subject, professional or otherwise, yet I cannot refrain from stating that, in my opinion, Dr. James Johnson has not acted judiciously in ridiculing a foreign journalist because he had offered praise to English surgeons for the advancement they had made in this department of their art; and if heretofore Dr. Johnson could find no successful operation on the principle of Deschamps, let him profit by this, and in future learn to be more guarded when criticising matters of serious importance to the advancement of professional knowledge and the well-being of mankind.

As every fact that can tend to prove or disprove an unsettled point, must be considered more or less valuable, it may not be useless to subjoin, as an appendix to this case, a concise account of a patient who, in the summer of 1823, was admitted into the Whitworth Medical Hospital, Dublin, under the care of Dr. Cuming. His complaint, on admission, was registered as paralysis of the right arm; but a large tumour being discovered in the axilla, the late Professor Todd was called to see the patient; and, after careful examination, he gave it as his opinion that it was an aneurism, which, from its magnitude, had lost its pulsation; but, to settle the point, he punctured it, and florid blood followed the insertion of a probe. When passed inwards for about three inches, the nature of the case being decided, the man was removed to the Richmond Surgical Hospital, where, from an attack of erysipelas consequent on the puncture, he died in a few days. Mr. Todd requested that I might examine the body, and, from notes made after the dissection, I abstract the following:—"The aneurism, which was of large size, occupied the axilla; the sac, in many places, was almost absorbed, and adhered firmly to the upper and outer part of this cavity; when opened, it contained large quantities of laminated fibrine, and, in its centre, was a cavity holding about eight ounces of coagulated blood; communicating with the cavity, there was an opening of this size in the axillary artery, below which the vessel was obliterated for the space of half an inch, corresponding to the situation where the sac so firmly adhered." Here, then, was a case where the aneurism was undergoing a spontaneous cure, in consequence of the pressure of the tumour having obliterated the artery on its distal side; and I look upon it as a valuable fact, towards confirming the utility of reviving the operation of Deschamps; and so much was I impressed with this opinion, that before Mr. Wardrop published his first essay, I recommended the operation in a case of large carotid aneurism, in a public hospital; but my chance was to be laughed at. However, when I again meet the two surgeons who so wantonly ridiculed me, it will be my turn to laugh at them.

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* This period will no doubt appear long; but when I secure vessels for aneurism, I never employ the force recommended by the late Dr. Jones, as I am convinced the division of the two inner tunics is not necessary for the effusion of a sufficient quantity of lymph to become the medium of adhesion; and I have but little doubt, that if surgeons would use less force on the application of these ligatures, secondary hæmorrhage would be a less uncommon consequence of operations for aneurisms. The period is not far distant when I may submit this subject more fully to the public.

From the London Medical Gazette.

VACCINATION.

NO. III.

To the Editor of the London Medical Gazette.

SIR—One of the most popular explanations of the occurrence of small-pox subsequent to vaccination, is that which attributes it to deterioration of the virus—the natural result of its passing through the bodies of so many individuals; and the obvious remedy for the evil, therefore, is more frequent recourse to

the cow. This doctrine has been repeated over and over again, until, by mere habit, it has come into general notice, making its impression on the public mind, *non vi, sed sæpe cadendo*. It is time that the truth or falsehood of this statement should be ascertained; and it was originally my intention to have made this the first subject of inquiry in the present communication, but the appearance in your columns of a letter signed M. D. obliges me to clear the ground by a few preliminary remarks.

I cannot bring myself to believe that that letter expresses the general opinions of the profession on the subject which it undertakes to discuss; but the notice which you have thought proper to take of it, has given it an importance to which *per se* it is scarcely entitled. The writer is pleased to say, that my single remark on the theory of spurious cow-pox (occupying exactly three lines of your small columns,) exhibits a *strain of sentiment* calculated to do much mischief; and he inquires, with great formality, whether I believe in an imperfect cow-pox, when the self-same letter (No. 1,) concludes with an expression of my intention to inquire into the probable sources of *imperfection in the vaccine process*.

The remaining questions which the writer of that letter has put, show that he has only thought very superficially on the subject which he discusses; for he mixes up many doubtful, and some quite inaccurate statements, with others that are clear and undeniable. I shall take the liberty of offering a few comments on these questions, the more willingly, as the discussions to which they will lead fall in with some which the undisturbed course of my argument would have naturally suggested.

I cannot avoid entertaining the suspicion that your correspondent, M. D., has never *hunted* sufficiently through the older writers to know what they meant by spurious cow-pox; for he talks of it as not affording the *full* amount of protection. Dr. Jenner defined that to be a spurious cow-pox "which is incapable of producing any specific change in the constitution, but which leaves it as susceptible of the small-pox as any other common cutaneous disorder." The original notions on this subject were, that there are three diseases of the cow's udder and of the horse's hoof, which have been indiscriminately termed cow-pox; but that only one of these three is the real preventive of small-pox. The other two were called *spurious* cow-pox; but it was confidently maintained that these two spurious disorders were capable of being continued by successive inoculations,—frequently showed an *exact similarity* in many of their appearances to the true species,—and that *it required the discrimination of the exercised practitioner to distinguish the one from the other.*"* This was the original doctrine of a spurious cow-pox; and I repeat what I said before, that such an idea no longer disturbs our minds; and that the doctrine, as thus announced, was, I firmly believe, a mere *phantom*. It will be observed, that the term *spurious*, as originally applied to cow-pox, had reference to the *primary* source of the pock, which was bad. I am well aware that the phrase was at one period employed (even by Dr. Jenner himself) to express the altered condition of a *genuine* cow-pox; but the term *degenerated* cow-pox was afterwards substituted, which, in the lapse of time, gave way to those which are now in common use, viz. *irregular* or *imperfect* cow-pox, which are always understood to mean modifications of a pock *originally perfect*. This important distinction between a pock originally bad, and one rendered imperfect by accidental circumstances, though obviously known to your correspondent, is not clearly stated by him.

In his desultory mode of treating the subject, he next adverts to two points in the doctrine of vaccination, which he takes for granted as being true, though they are certainly open to much doubt, and, as far as my present experience goes, are actually contrary to the fact. These are, first, the question whether genuine cow-pox can ever pass through a system so as to excite a local affection, but to afford no constitutional security whatever; and, secondly, whether such an irregular or *imperfect* pock is capable of being perpetuated by inoculation, so as not to afford the due measure of security against the small-pox. Your correspondent evidently means to decide both questions in the affirmative, though the obscurity attaching to his use of the term *spurious* gives him a loop-hole at which he will perhaps desire to escape. On the first of these questions I offered an opinion in my last letter. My belief is, that however imperfect the pock may be, provided some areola be formed, a certain portion of protective influence is imparted to the constitution, though that be slight, and probably temporary. This, however, is a point still open to discussion. Dr. Jenner held, at one time, (I do not know if he continued to maintain the doctrine) that virus taken from a true vesicle at a very late period, produced an imperfect disease; and your correspondent probably alludes to this when he asks, "whether it be of moment that the virus be employed in its active or efficient condition?" The facts, are, I believe, these: after the tenth and eleventh days, the virus becomes so *diluted*, that it is extremely difficult to reproduce the disease by it. Out of a dozen incisions made with such lymph, not more than one or two will prove effective; but that one is just as good, and just as effectual in preserving against the small-pox, as lymph of the seventh or eighth days. The unanswerable argument in favour of this position is, that the *scabs* of cow-pox, moistened with a little lukewarm water, will produce the disease in all its purity; but out of twenty or

* See "Address to the Public," by H. W. Jenner, 1799. Pages 9, 12, and 13.

thirty incisions made with such a virus, not more than *one* will be found to take effect.

Again, your correspondent asks, with a sort of triumph, "have I forgotten that an irregular or imperfect pock, when excited, is capable of being *perpetuated* by inoculation?" If he means to speak of an imperfect pock, the offspring of a *perfect* one, my reply is, that I have not forgotten it, because I never knew it. In fact, I know that the direct reverse is true; and that, as the modified small-pox will produce in the unprotected the true (perhaps confluent) small pox, so will cow-pox, degenerated by some peculiarity in the habit of an individual, reappear when transplanted into a healthy, well predisposed subject, in all its original purity and perfection. I have proved this in numerous cases at the Small-Pox Hospital, and it is an important practical fact, of which, if your correspondent should doubt, he may, at any time, with perfect safety to the individual, convince himself by actual experiment.

And this brings me, at length, to the question of recurrence to the cow, the point from which I diverged in pursuit of your correspondent M. D. It is insinuated by many, that we should recur for fresh supplies of lymph to the cow, because the virus necessarily degenerates by passing successively through so many human bodies. I deny this assumption *in toto*. So far from seeing any evidence of degeneration, I am sure that the lymph with which I vaccinated many children on Monday last, was as perfect as the best lymph of 1799. The elevation and pearl-like colour of the vesicles on the ninth day, the extent and circular shape of the areola, the regularity in the stages of the disease, and the colour and form of the resulting scab observable in the cow-pox of the present day, are such as leave nothing to desire. I have already expressed my firm conviction, that by the careful selection of healthy and well predisposed children, the pock may be restored from an imperfect to a perfect state; and it naturally follows, that by a similar care, it may be kept up for any length of time in that desirable condition. But a question of great practical moment meets us here. What is the proportion actually found to exist, in practice, between the perfect and imperfect pocks? for this naturally leads to the inquiry, what is the minimum of subjects on whom you can operate, so as to ensure at all times lymph in a state of perfect activity? I have no experience of the fact; but from all I have heard and read, I cannot doubt that if three or four children are *successively* vaccinated from each other, *all* of whom are, from various causes, ill-disposed to take the disease, the matter degenerates, and at length wears out altogether. A good illustration of this doctrine may be found in a letter from Mr. Fergusson, on the state of cow-pox at Sierra Leone.* I have heard it calculated, that even supposing the subjects to be well selected, one out of every five vaccinations fails the first time; but as the constitutional disposition to receive the cow-pox kindly can never be predicted with perfect precision, it follows, that in order to secure a permanent supply of genuine efficient cow-pox, two or three children at least must be vaccinated at the same time; and when we further take into account the certainty of occasional failure in the operation, the chance of the child's being attacked by some other disease, the great probability of inattention or obstinacy on the part of some parents, it may safely be concluded, that to ensure a steady supply of recent and perfect lymph all the year round, 500 children at the least must be vaccinated annually. This I am inclined to consider as the minimum of vaccinations at which any establishment can secure its own supply of perfect fresh lymph at all times.

But to return to the consideration of that popular question—how far it is proper, and even necessary, to have occasional recourse to the cow, and to allow the present sources of vaccine lymph to die out? To my mind many powerful arguments suggest themselves against the adoption of such a measure. 1. It is by no means easy to find the true cow-pox even in a large dairy. I have been given to understand by those most conversant with the subject, that a twelvemonth often elapses without its being seen. 2. There must be always some doubt as to the purity or genuineness of the new stock, until the experiment of variolous inoculation has been subsequently made; which parents, who subject their children to vaccination, are very seldom disposed to allow. 3. The true vaccine lymph, as first taken from the cow, is frequently of a more acrid nature than that which has been assimilated to the human constitution by frequent successive inoculations, and consequently the first trials are likely to produce glandular swellings and other inconveniences, and thus occasion distrust rather than increased confidence. Fourthly, and lastly, it is not found that the cases of small-pox, after vaccination, are comparatively more frequent among persons recently vaccinated. It is true that we hear of such cases much more frequently than we did ten or twenty years ago; but common experience will bear me out in saying, that the occurrences of which I speak are principally met with among persons vaccinated from fourteen to four-and-twenty years ago. When we do meet with children under ten years of age affected by small-pox, subsequent to vaccination, the disease is, for the most part, very mild, scarcely deserving a higher title than that of varicella.

These are the objections I have to offer against the proposal to revert frequently to the cow. It appears to me not only uncalled for by the circumstances of the times, but in some respects hazardous; nor am I convinced that it would tend, in any degree whatever, to diminish those unpleasant occurrences which are now bringing vaccination into some dis-

* Journal of Foreign Medicine. Vol. 1. p. 494.

credit. On the contrary, it appears to me that a very different train of measures must be resorted to, to meet the exigencies of the case. Instead of seeking for new and stronger lymph, that which we have must be diligently fostered and encouraged; and the supplies of it rendered as copious, as perfect, and as easily accessible as possible. These I believe to be the real and efficient remedies for the evil now so generally admitted; and it will be the object of my next (and concluding) communication, to show what these measures are, and how they may, most advantageously to the public, be carried into effect.

I have the honour to be, Sir,
Your very obedient servant,
GEORGE GREGORY.

From the Medico-Chirurgical Review.

THE MORBID ANATOMY OF THE BRAIN. By ALEXANDER MONRO, M. D., &c. &c. Vol. I. *Hydrocephalus.* 8vo. pp. 200, with 5 coloured plates. Edinburgh and London, 1827.

Whether we reflect on the mortality occasioned by hydrocephalus, or on the learning and opportunities for observation of the author, we cannot but conclude, that the volume under review will attract considerable attention. Dr. Coindet has stated that twenty thousand deaths annually result from hydrocephalus in France—while Dr. Alison informs us that 40 out of 120 patients die of this disease in the New Town Dispensary. According to the late Dr. Davis, of London, 8 out of 45 deaths, in the Universal Dispensary, were produced by hydrocephalus.

In respect to the author, it appears that it is now more than twenty-five years since he began to direct his attention to organic disorders of the brain--but, after long observation and patient investigation, he had nearly given up the undertaking, from the difficulties of the subject, when the death of a relation, by a species of hydrocephalus, to him quite novel, gave a new impulse to his researches, and enabled him to accumulate the mass of facts herewith presented to the public. We shall do most justice to the author, and confer most benefit on our readers, by confining ourselves, in this article, almost entirely to the task of ANALYSIS, since the facts are already in a very concentrated state, as well as in very great number.

The work is divided into two chapters—one containing the morbid anatomy—the other the symptomatology, &c. of hydrocephalus. We shall prefer reversing the order which Dr. Monro has chosen, and take his second chapter first. This second chapter, indeed, of itself, offers ample scope for an analytical article. We shall follow the sections seriatim.

SECT. I.—HYDROCEPHALUS, IN WHICH THE SKULL RETAINS ITS USUAL SIZE AND FORM.

Of this, there are two very different species—the one decided in its character at the outset; extremely rapid in its progress, proving fatal in three, four, or five days; very rare in its occurrence, and, according to our author, undescribed by any other writer. The other species is obscure in its origin; slower in its progress, (being of three or four weeks' duration;) very frequent in its occurrence, and described by many writers.

Most Acute Species.

"This rare form of the disease is very sudden in its attack. There is no previous headach, drowsiness, stupor, nausea, vomiting, paralytic state of any part of the body, or any one symptom denoting a derangement in the functions of the nervous system.

"It begins like the croup. The child awakes in the night in a state of extreme agitation, and much flushed, and with a quick pulse; he is hoarse, and the sound of the voice when he inspires is similar to that in croup,—the sound seems to come from a brazen tube, which is contracted at a certain part.

"Children who are stout and healthy, are equally liable to this disorder as the feeble and emaciated. And I have seen a patient, on the very day he was attacked by this disorder, who seemed very cheerful, and took his meals well, and was to all appearance in the most perfect health.

"The giving an emetic relieves the breathing, and, upon examining what has been rejected by vomiting, it is found to be evidently undigested."*

Some cases are given by Dr. M. in illustration of this very fatal disease.

Case. At half past ten o'clock, P. M. (Sunday) a stout boy, 20 months old, awoke suddenly from his sleep, (which had been apparently tranquil) as in a fright, and coughed violently, with a croupy sound, his breathing being difficult and quick. He seemed feverish—was thirsty—unwilling to lie down—pulse 150 in the minute, and rather hard. He had been in apparently perfect health during the preceding day, which was intensely cold. He had had two natural motions, and ate his food heartily. Under the impression that the disease was common inflammatory croup, an antimonial emetic was administered, which operated mildly, and brought up some ropy

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* "When this sheet was about to be sent to press, I learned from Professor Burns, that he had described, in his Principles of Midwifery, this very acute form of hydrocephalus, which he attributes to an affection of the origin of the eighth pair of nerves, induced by the state of the extremity of the fifth in dentition acting on its origin, which is near the eighth. The recurrent seems more immediately in fault, producing a temporary paralysis of the muscles of the glottis rather than a spasm. It by no means ends necessarily in hydrocephalus, but it sometimes does, as, after the child has been apparently well for weeks or months, he is carried off by hydrocephalus, which change is first indicated by general convulsions. Few children recover when the original attack is accompanied with convulsions, yet the case is not altogether hopeless."

mucus, bile, and *undigested* turnip and carrot, eaten the preceding day. Mr. Bryce and Dr. M. saw him a quarter before 12, when an ipecacuan emetic was exhibited, and afterwards the semi-cupium. When the vomiting subsided, three grains of calomel were given, and the child fell into a sleep at 4 the next morning, when a large blister was applied to the larynx, but slipped down on the sternum. At 8 A. M. (Monday) a dose of castor-oil was given to work of the calomel. Three offensive stools, one of them green, were discharged. At 9 o'clock that morning, Dr. M. and Mr. Bryce found the child more lively, his breathing less frequent, and his voice stronger. He now sang and laughed, but his voice was still husky. At 4 o'clock that day, feverish symptoms came on, and his breathing was more affected. Tepid lavations and a dose of calomel were prescribed, and he passed a tolerable night. *Tuesday morning* found the little patient in nearly the same state; but in the evening there was another exacerbation of fever, cough, and difficulty of expectoration. At 10 P. M. the pulse was 200, and very hard and sharp. He breathed rather like an asthmatic than a croupy patient—countenance much flushed, and indicative of great distress. Mr. Bryce examined the child's mouth, and found the gums much swelled and inflamed, and the dentes caninæ, on each side, about to cut the gum. The gums were incised freely, and there was much discharge of blood. The child now started much more frequently than before. Five leeches were applied to one of the legs, and much blood was evacuated by means of immersion in warm water. Three grains of calomel were given, and procured a large healthy evacuation. We need not pursue the details any farther. The child died the next day (Wednesday) at 5 P. M. The dissection is very interesting, and we shall give it in the words of the author.

"*Dissection twelve hours after death.* The cavity of the abdomen being first examined, the intestines were found in their usual situation, of a white colour, and moderately distended with air. The stomach, which was much contracted, lay in the left hypochondriac region, exhibited a blanched appearance; and, when slit open at the lesser curvature, it was found empty, and its mucous membrane was uniformly healthy, and the rugæ were very distinct. The mesenteric glands were of their natural colour, size, and consistence, and all the abdominal bowels. The large blood vessels also were almost empty.

"All the bowels of the thorax were sound.

"The veins on the fore part of the neck were quite empty; the trachea externally was of a silvery whiteness. An incision was made from the upper part of the thyroid cartilage into the division of the wind-pipe; the mucous membrane lining the larynx was of a white colour, and in every respect healthy. There was no appearance of the croupy membrane, no thickening, no ulceration, nor any mark of preceding inflammation. The trachea and branches of the wind-pipe, as far as they could be traced, were also healthy and free of mucus. The fauces and pharynx were also sound.

"The *brain was large, firm, and healthy;* and the veins entering the sinuses were distended with dark blood. *The upper surface of the brain, particularly the superior part of the posterior lobes, was covered with a transparent gelatinous effusion. On opening the ventricles, about an ounce of colourless serum was discovered, which had raised the fornix considerably.* The medulla oblongata and tuber annulare were found floating on a great quantity of clear serum. The veins covering the tuber annulare and medulla oblongata were distended with blood, so that they exhibited a deep scarlet colour. All the nerves at their origin were sound, *except the fifth and eighth pairs, which were also of a deep scarlet colour, and covered with turgid vessels.*

"*On removing the brain, by cutting through the medulla oblongata, a considerable quantity of serum rushed from the upper part of the spinal canal.*

"The vessels of the spinal marrow were turgid, those at the cervical portion of a vermilion-red colour, and those of the lumbar portion of a dark red hue. *The eighth pair of nerves was of a deep uniform red colour along its whole tract, as far as its branches going to the lungs.*"

The author proceeds to the particulars of some other cases of this formidable disease, which is not confined to the infantile state. Thus, a woman, aged 65 years, was subject to spasms in her stomach, and obstinate constipation. She died very suddenly. On dissection no morbid appearances could be found in the stomach or intestines. "There was considerable effusion of a watery liquor, and also distention of the vessels of the pia mater over the eighth pair of nerves within the membranes, and at the base of the brain." The following case occurred in the practice of Drs. Monro and Saunders.

"J. B., æt. eight months, a plump stout child, became remarkably fretful, and would take no kind of food. Next day he was seized with slight cough and hoarseness, which gradually increased, and also with difficulty in swallowing; so that a part of his food, upon his endeavouring to swallow, was rejected through his nose. Pulse quick.

"On the following day, the symptoms had materially abated, especially the cough, and he expectorated a good deal of viscid phlegm.

"During the night, and still more during next day, he became much more uneasy; his breathing became more oppressed; and the voice was so hoarse and shrill, that several old women who saw him, said *he had the croup.* There was great heaving and agitation of the chest.

"On the subsequent day, the breathing was very laborious, and much hurried; pulse very rapid, and between 120 and 130 in the minute; and next day he died.

"*Appearances on Dissection.*—Skull very vascular. There was a slight effusion of

serous fluid between the arachnoid coat and pia mater; and about ℥i. of a similar fluid was contained within the ventricles of the brain. *The vessels of the pia mater at the corpora quadrigemina and tractus optici, and at the origin of the eighth pair of nerves, were much distended with blood.*

"Lungs quite sound.

"No morbid appearance was discovered in the larynx and trachea. A small quantity of mucus, which had more of a greenish hue than in the sound state, ran out on opening the windpipe, and there was some frothy mucus within the smaller branches of that tube.

"The only morbid appearance in the abdomen was a very considerable enlargement of the mesenteric glands.

"The symptoms in the preceding cases corresponded in my opinion with the phenomena which occur upon irritating the eighth pair of nerves of the inferior animals.

"The croaking sound of the voice, and the difficulty in breathing, were probably to be imputed to the effects of the irritation, to which the laryngeal nerves had been exposed, for the stretching or dividing these nerves in a living animal produces the same effects.

"The functions of the lungs and stomach are suspended; from the irritation applied to the eighth pair of nerves, which also happens when these nerves have been divided. If the eighth pair of nerves of an animal be divided, and if that animal be allowed to take food soon after the division of the nerves has been made, vomiting in a short time ensues. Precisely the same took place in the child above described,—and the food is found to be unchanged,—which also happens in this form of hydrocephalus. In the case above mentioned, the vegetable substances which the child had taken in broth, *were indigested, though they had been within the stomach for twenty hours.*

"In the child's case detailed in page 70, &c. the difficulty in breathing gradually increased, and the face became purple towards the conclusion of the disorder; and, upon examination after death, the air tubes and cells of the lungs were found filled with a frothy fluid; and hence the lungs did not collapse. All which circumstances take place when the eighth pair of nerves of an animal have been divided.

"In the cases above detailed, the difficulty in breathing was much increased by the effort of vomiting; and the same happens when the eighth pair of nerves of an animal have been divided."

Another case is quoted from the work of Mr. Swan on the nervous system, which bears considerable analogy to the above.

Diagnosis of this Hyper-acute Form.

It is of some importance to be able to distinguish this dangerous modification of hydrocephalus from the more common forms of croup. It is not, according to our author, dependent on the state of the weather, the locality of residence, or any of the predisposing causes of croup; "but is rather connected with the period of teething, and nervous irritation." The following are the more remarkable distinctions between this disease and the common croup.

"The patient, at the outset of the disease, seems in a state of nervous irritation, often starts in his sleep, and in a short time the disease assumes the appearance rather of a spasmodic affection of the larynx, than of the inflammatory croup; but there is not so much wheezing, and the disorder is not mitigated by the expectoration of ropy mucus, or by vomiting; and what is discharged by vomiting may be observed to be indigested.

"The purple colour of the face is a striking feature of the earlier part of the croup, but it is not obvious in this disease until twelve or fourteen hours before death, and is probably owing, as in moribund animals, to a weakness of the muscles of inspiration.

"The longer the duration of this disease, the less shrill and hoarse the voice becomes; whereas in the common croup the contrary takes place.

"Coagulable lymph sometimes forms a distinct tube within the larynx and windpipe in the advanced stage of common croup, and may be perceived moving within it, which never happens in this disorder.

"This disorder may be readily distinguished from inflammation of the lungs;—there is no cough, or pain in any part of the side or breast, which is increased by inspiration;—in proof of which, the first mentioned patient repeatedly sang during the progress of the disorder, and as loudly as when he was in the most perfect health. This form of hydrocephalus may be distinguished from the more common form of the disease; as the sight is not impaired, and there was no dilatation of the pupils, and little or no delirium.

"Lastly, when the voice becomes weak or shrill, from any cause compressing the windpipe,—as by matter collected behind it,—by diseases of the bronchial or thyroid glands,—by aneurism of the aorta, or carotid artery,—or by any other cause compressing and straitening the windpipe, the alteration from the natural sound of the voice is permanent; whereas, from this disorder it is but temporary."

The method of treatment may be soon despatched. The rapidity of the disease, and the seat of the effused fluid, leave little to be done by art. The exhibition of a large dose of calomel, and the application of numerous leeches to the head, with a blister to the nape of the neck, at the very commencement of the attack, seem to Dr. Monro the most proper remedies.

We now proceed to the more common form of the disease.

ACUTE HYDROCEPHALUS.

It must be confessed that there is not one pathognomonic symptom of a collection of water within the brain. The characters of the disease are deduced rather from a chain or combination of symptoms—and hence the

nature of the disease remains often undetected until it is beyond the reach of art, unless the most scrupulous attention be paid to the most minute phenomena. The following graphic description of the early symptoms which characterize hydrocephalus, is deserving of record in this place. We could not abbreviate without injuring them.

"The earlier symptoms are those of irritation, the latter those of oppression.

"The early symptoms are generally so mild as to attract but little attention, and often escape the notice even of the parents of the patient. The disease is most frequent in persons of a scrofulous constitution, where there is little energy of the system, and little activity in the vascular system; or, it is either the consequence of some organic disorder of the brain, or its investing membranes,—or of such disorders as impede the free return of blood from the head, or the free circulation through the bowels of the chest.

"The early symptoms of the more mild form of the disease, are, a sense of general uneasiness over the body, accompanied by languor, paleness, and collapse of the features; the eyes look languid, have not their usual brilliancy, and frequently are turned upwards; the child is peevish, which is strongly expressed in his countenance; the countenance has no longer the bloom of health; his head feels heavy, and the child, unwilling to run about, seems easily fatigued, and always desirous of lying down on the top of the bed. His appetite is bad, and capricious—and seems unwilling to take the trouble of eating, and there is often bilious vomiting.

"If the child be old enough to express his feelings, he complains rather of a dull noise in his head than of acute pain, and this increased somewhat on pressure. He is very restless in bed, and seems much disturbed in his sleep.

"In a short time the symptoms become more urgent, the skin becomes very dry, and the lips are cracked. There is a permanent lassitude; the bowels become torpid; the child complains of constant pain over the eyebrows, which are swollen, and of giddiness; nausea and sickness succeed. There is a total loss of appetite. The senses of vision and hearing are morbidly acute; the light is intolerable,—the patient turns away from it,—keeps his eyelids half closed,—is awakened from his slumber by the slightest noise, and often starts from sleep screaming. He will not allow his pulse to be felt.

"Many children suffer very little, if at all, from headach, at the commencement of the disease; and in those who have, we observe that there are remissions.

"The headach is relieved in the earlier stage of the disease by purgatives.

"The cheeks are much flushed, especially in the evening, and one cheek is frequently more flushed than the other; his nose is very itchy, and his tongue hot and dry. The papatient awakes generally in a fright, and screaming; seeming to suffer excruciating headach, to relieve which, he clasps his hands on his head; even when not disturbed, he sleeps only for two or three hours at a time; he suffers from sickness, expresses disgust for every kind of food, and vomits especially when moved; and, as Doctors Fothergill and Quin have well observed, 'the sickness and headach sometimes alternate with each other.'

"These symptoms are accompanied by heat of the skin, and quick pulse, amounting to 100 or 110 in the minute, and but rarely by thirst.

"One of the most striking features of this disease, is a torpid state of the system;—salivation is not readily excited; nor does a blister rise well; and very considerable doses of antimonial powder do not occasion even a slight degree of moisture on the skin.

"The patient is costive generally, and is not easily moved by a purgative medicine.

"The fæces have an oily appearance, sometimes a very fetid smell, are generally of a green or brown colour, somewhat like chopped spinage—which is not owing to calomel, as it is observed when no calomel has been given, and are in consistence somewhat like glue. Towards the conclusion of the disease, diarrhœa sometimes comes on to such a degree, that opium is required to check it.

"The urine is sometimes retained for a longer time than during health, and there are also instances in which the little patient had a desire every hour to pass water;—and I attended a child afflicted by this disorder, who passed for some days very little urine; but within four or five days of his death, he passed fully as much urine as when in perfect health. Often the power of expelling the urine is completely lost, so that the regular use of the catheter is required.

"The position and gestures of the child in bed, and the effects of motion, merit attention, being very characteristic of the disease.

"A child with this disease cannot bear the erect position, or to be moved, evidently from the headach he suffers; he is tolerably easy only when in bed, and excluded from light. In the earlier part of the disease, he cannot sleep with the head low; he lies in bed with outstretched arms, which has a tremulous motion—are often directed towards the head, or firmly clasped upon it; he is constantly turning and tossing from one side of the bed to the other, as if he could not find any easy posture, and generally kicks the bed-clothes with one or both feet, and very frequently groans much, as if under the influence of pain.

"The gait of the patient is peculiar; he totters, and cannot walk with his usual firmness, one side of the body being weaker than the other; he lifts his legs very high, and takes long steps of unequal length, like a paralytic person. This is a bad symptom, and generally connected with disease at the basis of the brain.

"In the progress of the disease, the sleep is still more disturbed, and the breathing becomes more irregular and difficult. The breath, according to Dr. Whytt, has a sickish and most offensive smell, which he never had observed in any disorder.

"There are also generally symptoms of a

derangement in the functions of the alimentary canal. Dr. Carmichael Smyth has remarked, 'Their abdomen is commonly flat, and compressed in a manner I have seldom observed, except in persons affected with the painter's colic.'

"The tongue is foul; sometimes it has a shining red appearance, or it is covered with aphthæ.

"There is much variety as to the severity of the symptoms, which merits much attention, as demonstrative of the cause of the disease, its seat, and as regulating the prognostic, and mode of treatment.

"Dr. Abercrombie has observed, when 'the effusion was combined with that peculiar destruction of the central parts of the brain, which I have given my reasons for considering as the effect of inflammation of these parts, there has been severe and deep-seated pain.'

"The combination of the above symptoms, the morbid sensibility as to light and hearing—great irritability of temper—the head hotter than the rest of the body, and often covered by a clammy perspiration, sufficiently mark this disorder in its early stage.

"After the disease has been of a few days duration, the pulse, which had been quick and irregular, sometimes becomes slower than in health, and also irregular; which, according to Dr. Whytt, marks the second stage of the disease."

The second stage need not occupy us long. In this stage, the pulse is slower than in the first, or even than in health, besides being unequal and irregular. The skin continues hot, or even hotter than before, while most of the symptoms above enumerated increase in severity. There is a want of correspondence in the movements of the eyes in this stage, and some degree of strabismus may be observed, while the patient's sufferings are evidently rendered more acute. He groans more frequently—gnashes his teeth—loaths every kind of food—sometimes has violent vomiting, while the headach is so acute as to occasion loud screaming. About this period, some patients experience a temporary remission of the more marked symptoms, from which the friends—and occasionally the medical attendants, draw false conclusions.

Third Stage.

This may be termed the stage of collapse. Irritability changes into stupor and drowsiness, and the body often becomes more cold than natural. The pulse is now very rapid—sometimes amounting to 200 in the minute.

The duration of this stage is very various—from ten or twelve hours to several days. The child is unable to turn the head or move the body—he sinks down in bed—is very drowsy, and often insensible to all irritations. One side of the body is frequently paralytic, which is a bad symptom. The eye-lids often droop, to a certain extent, over the pupil, and, on raising them, the cornea appears muddy, and the pupil is much enlarged. The sight is indistinct or double—indeed all the senses, except that of hearing, appear blunted. Emaciation proceeds rapidly. Sighing is very common. The discharge from blisters applied to the head is remarkably fetid. The pupil is sometimes dilated and insensible to light—sometimes contracted—which is equally a proof of extreme blindness and insensibility of the retina. Delirium is a frequent symptom, at this early period of the disease; and comes on much more suddenly than in fever. Towards the conclusion, the muscles of the face and extremities are often convulsed, while the thumb and fingers are strongly bent inwards, the pulse being imperceptible at the wrist. We need not pursue the details of this last scene. They are too familar to the practitioner.

The *peculiarities* in this complaint are very deserving of attention, as tending to puzzle the medical attendant. We shall extract a few of these from the text of our author.

"1st. I have seen several instances in which a considerable quantity of water had been collected within the ventricles of the brain, and in which these ventricles had been considerably enlarged, notwithstanding which, there were no peculiar symptoms which indicated its presence."

"2dly. The disease sometimes begins by repeated convulsive fits, or by a spasmodic contraction of the extensor muscles of the head; by which it is forcibly drawn backwards, and kept so until a day or two before death. This symptom was so strongly marked in two cases, that the mothers of the patients recognised the disease in another child, from the peculiar manner in which the head was drawn backwards; so that the disease somewhat resembles tetanus, but the head was not so rigidly drawn back as in that disease, for it might be bended forwards; but as soon as the hand was taken away, the patient drew it back again.

"These convulsive fits were the first symptoms of derangement in the functions of the system which attracted the attention of the parents, and which led them to seek for medical aid.

"Squinting is sometimes observed about the beginning of the disorder; and the pupil is much dilated, and has somewhat of a reddish colour.

"In some cases there is no affection of the pupil during the whole course of the disease.

"The disease sometimes commences by sleepiness.

"Excessive costiveness is on some occasions the primary symptom of this disease."

Sometimes persons affected with hydrocephalus are seized with hemiplegia, and die in the course of a day or two—and, on dissection, three or four ounces of water will be found in the ventricles of the brain. The disease sometimes begins like acute rheumatism, and the symptoms of cerebral affection do not show themselves till three or four days before death. In some instances, there are no symptoms of irritation, but merely those of compression, as insensibility, coldness of the head and extremities, slowness and irregularity of

the pulse and breathing. A day or two before death, Dr. M. has seen little patients recover their senses, take food, and show symptoms of recovery; but suddenly the phenomena of effusion come on, followed by convulsions and death. Squinting is by no means a constant symptom. There are instances in which the disease has terminated favourably after convulsions, blindness, and delirium, had taken place, and, after the patient had been supposed to be dying. Some patients continue sensible during the whole progress of the disorder, except for a few hours before death.

CAUSE OF THE EFFUSION.

This, like most other topics of causation, has occasioned great discussion and discrepancy of opinion. According to Quin, there is but one cause—"a morbid accumulation of blood in the vessels of the brain—sometimes proceeding to a degree of inflammation—and generally, but not always, producing an extravasation of a watery fluid." Drs. Rush, Yeats, and Golis, (of Vienna) also consider the disease as the result of inflammation and turgescence. Before subscribing to this hypothesis, which must operate so powerfully on practice, Dr. Monro thinks it necessary to inquire, "whether this disease usually occurs, in persons who are disposed to inflammatory disorders, at or near the meridian of life, when the human body is most liable to suffer from inflammatory diseases." Although several points in the following train of reasoning are defective, if not erroneous, yet Dr. Monro has adduced sufficient evidence to prove the fallacy of that modern doctrine, (to which we lately alluded, when reporting Mr. Lawrence's sentiments in the Medico-Chirurgical Society) which represents all serous effusions into any of the cavities of the body, as invariably the products of inflammation.

"With regard to the first of these points, it may be observed, that hydrocephalus is so rare after puberty, when the constitution is most liable to inflammatory disorders, that Dr. Cullen,* and other writers of eminence, have described it as being peculiar only to infancy. That the disease is rather to be imputed to debility follows from the well-known fact, that hydrocephalus is frequently a disease which may be traced to bad nursing, improper food, dentition, the sequel of the most tedious and debilitating disorders, as hooping-cough and scarlatina. Besides, hydrocephalus is often a disease of the fœtus in utero, which nips the bud before or soon after it is blown; for the child dies soon after birth, after having made a few laborious and convulsive respirations.

"If Dr. Quin's theory had been well founded, hydrocephalus, like an inflammation of the lungs, and other inflammatory complaints, should have been most prevalent amongst robust men during the prime of life, when the human frame is most prone to other inflammations; whereas, it is a disease of infancy, of debility, and very often connected with a scrofulous habit of body. If it be supposed that hydrocephalus is always connected with inflammation of the brain, and that inflammation gives rise to the softening of that organ (which is the favourite opinion of Lallemand, Rostan, and others,) in that case, the brain should be found invariably in a softened state, which is not consonant to my observations.*

"Dr. Mills of Dublin has published twelve cases of hydrocephalus, several of which appear to have been connected with inflammation of the brain, but no mention is made of softening of the brain; on the other hand, in one of these, the brain is said to have *been harder* than natural.

"Dr. Hooper, at page 23, in his explanation of his Plate, representing inflammation of the brain, has observed, 'a pulpy state of the part is *now and then met with.*'

"Dr. Watson also has described a case in which the septum lucidum was of an unusual thickness and firmness.

"If hydrocephalus had originated from inflammation, it should have been more frequently the *immediate* consequence of external violence. Whereas Dr. Cheyne observes: 'With extensive opportunities of seeing hydrencephalus, I have *not met one instance* of its having been directly, and I believe only where *it was indirectly, occasioned by external violence;*' and when (as sometimes happens) it originates from such a cause, the effect does not follow until months or years have elapsed, and when a debilitated action of the blood vessels has been induced by the violence, just as palsy is sometimes a consequence of external injury, which palsy is followed by dropsy.

"If inflammation of the brain had given rise to this species of hydrocephalus, the attack of the disease should be sudden and well marked, and its course rapid, like to that of phrenitis; whereas the origin of the disease is generally not well marked; indeed, so much so, as often to escape the notice of the parent, and even that of the experienced physician.

"It may here also be observed, that I have made experiments upon several rabbits and pigs, with the view of determining this question, but though I excited inflammation of the brain by trepanning the skull, and cutting off a portion of the dura mater, the effusion of a watery fluid within the head did not follow.

"It is admitted even by those who impute hydrocephalus to an inflammation of the brain, that the symptoms of phrenitis are well marked, whereas those of hydrencephalus are often very obscure; indeed, in some cases, there *is no one symptom indicating the effusion within the head.* I have met with four cases in which a watery fluid was collected within the ventricles of the brain, and in all of these there were none of the symptoms during life which led to the most distant suspicion of water being lodged within the ventricles of the brain.

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* "See his Definition of the Disease."

* "Vide Case described at p. 42, in which there were marks of preceding inflammation."

"If this species of hydrocephalus be owing to an inflammatory state of the brain, there ought to be no distinction as to the symptoms, origin, progress, and consequences of phrenitis and hydrocephalus.

"Inflammation of the brain is thus defined by Dr. Cullen: '*Pyrexia vehemens; dolor capitis; rubor faciei et oculorum; lucis et soni intolerantia; pervigilium; delirium ferox, vel typhomania.*'

"The symptoms of this species of hydrocephalus do not correspond with the above definition.

"One of the most striking features in inflammation of the brain, is the state of the pulse; but that character is also awanting, for the state of the pulse is widely different from that of a person afflicted by apoplexy or inflammation of the brain. It is not full, as in the former, or hard, as in the latter. It is no doubt quick, as in other diseases which are the effect of debility; in the same manner as the pulse rises after a great deal of blood has been drawn.

"Beside, no one author who has described the symptoms of phrenitis, has stated *that the pulse becomes slower some time after the commencement of the disorder;* and, on the other hand, bleeding from the eyes, mouth, bladder, and intestines, which are so frequent during phrenitis, have seldom or never been observed to occur during the progress of hydrocephalus. If hydrocephalus depended upon a slight degree of inflammation, the disease would be more frequently cured.

"There is a great difference between the watery fluid which is effused in this species of hydrocephalus, and that in the former most acute species which is connected with inflammation. The latter is turbid, and masses of coagulable lymph shoot through it, and it resembles water accumulated within the abdomen in cases of dropsy of the belly, originating from peritoneal inflammation. Whereas the former is as clear as spring water; and as Bellini, Boerhaave, Du Haen, Malpighi, Drs. Watson, Carmichael Smyth, and Coindet remark, the effused fluid does not coagulate by the application of heat or the mineral acids."

The analysis of the hydrocephalic fluid by Dr. Trail, is in support of our author's opinion. At the first tapping, no coagulable lymph was found, as the fluid had not been derived from an inflamed surface; but, after tapping the brain, which operation had probably induced some degree of inflammation, the nature of the effused fluid was materially altered—it contained a certain proportion of coagulable matter.

Dr. M. observes that, an inflammation of the brain is frequently the immediate sequel of insolation, or of external violence. But water in the head is not occasioned by similar causes, nor is the disease more frequent in warm than in cold climates, like phrenitis—nor is it the immediate effect of external violence—nor of trepanning the skull, and afterwards injuring the brain of the animal, a fact which he ascertained by repeated experiments on animals.

"Injuries of the head, no doubt, sometimes give rise to hydrocephalus, but the effect does not immediately follow the cause; *the fluid is not effused until after the lapse of several months or years,* when the vessels have become debilitated, in consequence of the previous over-excitement. (To employ Dr. Cheyne's own words,) 'By calling into play, what, from a good and fortunate management, had hitherto become latent; I mean, *a scrofulous condition of the system, which I have regularly observed to follow a severe accident, and which wonderfully favours the establishment of hydrencephalus.*'

"Some advocates for the opinion that hydrocephalus originates from inflammation of the brain, have imputed the disorder *to a fault in the digestive* organs.

"But a fault of the digestive organs, so far from adding to the vigour of the constitution, produces a very contrary effect, and, by diminishing the vis vitæ, tends to avert or to remove a disposition to inflammation.

"The morbid appearances most frequently discovered on dissection, are generally hostile to the hypothesis, that hydrocephalus acutus is connected with inflammation.

"The pia mater very seldom exhibits, in cases of hydrocephalus, those appearances which, according to the late Mr. J. Hunter (a very competent judge,) are the genuine marks of inflammation.

"That distinguished surgeon has observed (p. 281.) 'When inflammation takes place in parts that have a degree of transparency, that transparency is lessened. This is probably best seen in membranes, such as those membranes that line cavities, or cover bodies in those cavities, such as the pia mater, where, in a natural state, we may observe the blood-vessels to be very distinct. But, when we see the blood-vessels *fuller than common, yet distinct in such membranes, we are not to call that inflammation.*'

"There is no part of the body in which it is so difficult to make the distinction between the presence or absence of inflammation, as in the pia mater.

"The pia mater did not bear, even according to Dr. Quin, all the characters of genuine inflammation,—it was not thickened,—it did not adhere ultimately to the substance of the brain, as in cases of inflammation of that organ. According to that distinguished pathologist, Dr.Baillie, 'when the pia mater is inflamed to a high degree, pus is formed.'

"Dr. Quin does not state that he discovered pus upon examining the state of the brain of persons cut off by hydrocephalus.

"Besides the thickening of serous membranes, as the dura mater and arachnoid coat, a preternatural adhesion of these generally follows the inflammation of these membranes. The result of my post-mortem examinations is, that, in a very few cases only, there were appearances of preceding active inflammation.

"It may be argued by the advocates for an inflammation of the brain being the invariable cause of hydrocephalus, that the slightest de-

gree of inflammation of that organ, or of its investing membranes, may not be appreciable by our imperfect senses; in the same manner as we cannot suppose (as has lately been stated,) that there is no difference in the purity of the air in the centre of London, and that at the top of the Malvern hills of Worcestershire.

There is no one point more difficult to determine, whether a morbid accumulation of blood really exists; and *granting that it does exist, whether it be connected with inflammation or not?*

"Until the precise caliber of the blood-vessels shall be ascertained, it is quite impossible to say when blood can be said to be accumulated in these vessels. Blood when accumulated in the blood-vessels, must occasion an enlargement of these, which does not suddenly happen.

"Inflammation is not the necessary concomitant or sequel of an accumulation of blood in the blood-vessels, the eye, for instance, often acquires a red colour, though the pulse be not accelerated, and though there be no degree of pain in the eye or forehead, and no degree of impatience of light, or any other symptom of active inflammation.

The vessels of that part of the brain which was lowest, were, in *many instances, fuller of blood than those of the uppermost part of that organ, which evidently is connected with the position of the head rather than with inflammation.*

"As the different advocates for the opinion, that hydrocephalus is connected with inflammation, have published very different statements as to the kind and degree of the inflammation, it does not seem to me to be against the rules of evidence, to suppose, as it is so difficult to distinguish the genuine characters of inflammation, that, in some of the instances, *no degree of inflammation had existed.*"

There are other arguments, Dr. M. thinks, which might be urged against the phlogistic doctrine. The same treatment has not been pursued in hydrocephalus as in other inflammations. If it originated in this last, it should be generally removed by the lancet. But local depletion is found more beneficial, and Dr. Quin himself acknowledges "that such patients do not bear large bleedings well." After leeching, Dr. Quin recommended mercury, as an efficacious remedy. Dr. Monro considers mercury as a stimulant and not a sedative—hence it ought to be injurious in purely inflammatory affections. This argument of Dr. Monro is one of the weakest which he has brought forward. Whether mercury is a stimulant or sedative may be a matter of opinion, or, indeed of doubt—but that it is injurious in inflammations is negatived by facts and daily observation. The following passage does not quadrate with the modern doctrine which ascribes all dropsical effusions to preceding inflammation.

"Of the identity between hydrocephalus and dropsy there is at least presumptive, if not positive, evidence.

"There is an analogy between the cause of hydrocephalus and dropsical disorders. Hydrocephalus, like dropsy, more frequently originates from debility than from inflammation, and is a frequent disease of infancy,—a period of life when the human frame readily bends under the pressure of every cause, which enfeebles the power of the constitution, as of long continued fever, scarlatina, phthisis pulmonalis, marasmus, measles, whooping cough, and diseases of the liver, spleen, and mesenteric glands.

"Dr. Hamilton senior has justly observed, 'that hydrocephalus often steals slowly on the devoted victim, with symptoms resembling incipient marasmus.'

"Till some better theory is established, it is not unreasonable to suppose, that *the marasmus of which I have treated, may, on some occasions, give rise to hydrocephalus, by impairing the vigour of the constitution, and favouring serous effusion in the ventricles of the brain.*

"It may be added, that Morgagni has mentioned the case of an elderly woman, which strongly illustrates the great influence of debility in producing hydrocephalus; it is said, 'she sank progressively to her grave, as under the pressure of age.'

"The detraction of blood has sometimes occasioned dropsy of the abdomen or chest. The same observation may be extended to hydrocephalus."

The experiments of Dr. Seeds and Dr. Sanders have shown that the excessive detraction of blood gives rise to effusion of serum within the head.

An impediment to the free return of blood from the venous system is, according to our author, the most frequent cause of hydrocephalus, as, also, of other dropsies. Hence, hydrocephalus is frequently connected with tumours of the brain—with an enlargement of the pituitary gland—tumours in the neck—hypertrophy of the heart—disease of the lungs—"or with any cause which impedes the free return of venous blood, as tumours pressing upon the superior longitudinal sinus, torcular Herophuli, or the jugular veins."

"Hence we meet with the effusion of water within the ventricles of the brain of criminals who, when in perfect health, have been killed by suspension. It is remarkable how soon the effect follows the operation of this cause. I found about half an ounce of water at the basis and within the lateral ventricles of the brain of a criminal, whose body I examined immediately after execution; and in other criminals, after the lapse of a few hours.

"Dr. Kellie of Leith, in his very ingenious paper upon death from cold, has observed, 'The effusion which was discovered within the heads of our subjects, can hardly be regarded as a post-mortem production; nor can it be presumed that it existed previous to their exposure on that night which terminated their existence. The perfect parallelism of the two cases,—their agreement with another case by Quelmalz,—their simultaneous exposure and death on the same night that another individu-

al died under similar circumstances, render such a supposition highly improbable. If this serous effusion were not a post-mortem effect, and if it had no existence previous to the exposure of the individuals, then we must conclude that the whole, or the greater part, was effused in the short interval between their exposure and their death."

A suppression of accustomed evacuations is acknowledged by all writers to be a very frequent cause of dropsy, and it may be extended to hydrocephalus. Dr. Golis, a warm advocate for the inflammatory origin of dropsy, tells us that, "when the urine is unnaturally scanty, the physician ought to be on the watch for an affection of the head." Hydrocephalus is very often connected with scrophula, and is most frequently found in scrophulous families. Dr. Percival, of Manchester, remarked that, out of 22 children who died of hydrocephalus, 11 were manifestly scrophulous.

"The appearances on dissection, in cases of hydrocephalus, scrofula, and dropsy, are similar.

"When water has been accumulated within the ventricles of the brain, scrophulous tumours in the vicinity of the venous sinuses, or in other parts of the brain, are occasionally found, scrofulous tubercles of the lungs or liver, and a scrofulous enlargement of the mesenteric glands. See cases above described, at p. 49.

"The analogy between hydrocephalus and dropsy, may be further traced from the effect of the remedies by which both diseases have been occasionally relieved or cured.

"Hydrocephalus is occasionally removed by the same remedies as other kinds of dropsy, though, on account of the peculiar structure of the brain, and the effects of the disease in deranging its structure, the cure is more uncertain.

"From what has been above stated respecting the origin, causes, and appearances on dissection, instead of regarding hydrocephalus as generally connected with inflammation, it is rather to be imputed to scrofula, or to those causes which occasion a derangement in the circulation of blood through the brain, through the bowels of the chest and belly, than to inflammation of the brain, or what has been called sub-inflammation by authors, and which acts peculiarly on a scrofulous habit."

The prognosis is generally unfavourable, though by no means so invariably so, as some writers would teach. Whytt acknowledged that he never cured a single patient who had those symptoms which certainly denote the disease. Fothergill made a similar confession. The reasons why hydrocephalus is so generally fatal, are ably summed up by Dr. Monro in the following manner.

"1st, Because when water has been accumulated within the brain, the functions of that important organ are, by the pressure of the accumulated fluid, more or less deranged, and the pressure probably occasions a deviation from the healthy structure of those very important parts of the brain which are in the vicinity of the ventricles; to which is to be added the influence of water, when once accumulated, giving occasion to the rapid effusion of more fluid, from its compressure upon the veins proper to the membrane which lines the ventricles, the large vein of Galen, and the velum interpositum.

"2d, The disease often proves fatal, because it is often connected with an organic disorder of the brain, or of its investing membranes, or with organic disorders in the neck or bowels of the chest or belly, which in many cases cannot be removed.

"3d, Because, if we adopt the opinion of some authors, that it arises from a conjestion of blood in the veins, the observations and ingenious experiments of Dr. Kellie have shown, that it is very difficult to remove such a congestion. The case detailed in pages 112 and 113 of this Essay, and the experiments of Dr. Seeds, show that large bleeding is followed by effusion of fluid into the ventricles.

"4th, Whether the softening of the brain be the prelude to the effusion, or the consequence of it, considering the disorganization of the brain thereby produced, it is difficult, probably impossible, to remove it."

Notwithstanding the above propositions, which are but too well supported by the experience of the profession, there are not wanting many instances in which all the more usual symptoms of the disease, already enumerated, have yielded to the efforts of nature, or to the means which the healing art has supplied. Drs. Monro, Percival, Dobson, Rutherford, and many others, concur in this opinion. "There are also a few examples in which the effusion of water has ceased, after the head had attained an extraordinary magnitude."

Treatment.—We have been much more minute in our analysis of the other chapters of the work before us than we shall be on this. The treatment of a disease will vary much according to the pathological notions which the practitioner may have imbibed.

"If the disease be supposed to originate in debility, in laxity of the brain and its vessels, it may possibly be averted,—by avoiding cold, —all vicissitudes of the weather,—and every means by which the bodily strength may be impaired,—and by endeavouring to improve and invigorate the constitution, by generous diet, wine, and the keeping the bowels regular,—and by removing irritation, and the irregular action of the chylo-poietic viscera,—by warm clothing, and moderate and daily exercise in a pure atmosphere.

"By adopting such a mode of treatment, I think I have had the satisfaction of averting the disease.

"But, on the other hand, should the disease be supposed to proceed from the over-excitement of the vessels of the brain, and if inflammation be the primary cause, and the effusion merely the effect, an attempt should be made to remove that state by the general and topical detraction of blood, low diet, by refrigerant applications to the head, by purgatives, and by setons applied to the neck, by

spices and blisters, and by avoiding all such causes as induce plethora.

"In my description of the symptoms of the subacute hydrocephalus, I have endeavoured to point out to my reader, that a derangement of the functions of the alimentary canal gives rise to the earlier symptoms of hydrocephalus. The patient's stomach is disordered; the abdomen is often tense, and painful; the stools are like clay, of a variegated colour, and of a very offensive smell; hence the necessity of evacuating the contents of the intestines by calomel and other purgatives.

"I have stated torpor of the intestines to be a consecutive symptom; and this merits peculiar notice, as indicating a derangement in the functions of the brain, in which case, a large blister should be applied over the head.

"Calomel, combined with James's powder, is of great use in restoring the healthy functions of the bowels."

Fothergill, Rush, Cheyne, and Carmichael Smyth, have highly recommended the daily use of the more powerful cathartics, as gamboge, colocynth, scammony, combined with calomel, and these in large doses, on account of the torpor of the bowels.

"In general, children bear calomel better than adults. If calomel be given in an over dose, it produces colic and severe diarrhœa, and sometimes inflammation of the intestines. A grain may be given every third hour to a child of a year old, and the dose is to be repeated until a free evacuation has been produced. But should the child have acute pain in the belly, the medicine must be given up, for if more be given, an inflammation of the intestines will probably follow. I have given three grains of calomel, three or four times a day, to children of ten or twelve years of age, afflicted by this disorder; and it did no more than keep the bowels open, or, at most, produced only three or four stools."

Dr. M. informs us that, by the application of a large *blister*, composed of tartar emetic and wax ointment, to the head, and the use of calomel, combined with James's powders, he has cured the disease, not in one, but in several instances. Dr. Rutherford, his colleague at the Dispensary, adopted the same plan, and has stated to Dr. Monro that he was equally successful. Dr. M. was first led to the employment of James's powder, from the recommendation of Dr. Cheyne, who speaks highly of its efficacy in this dangerous disease. "If there be pain and tenderness in the region of the liver, the patient will derive much benefit from the application of leeches to the abdomen." Dr. M. prefers one large *blister* of tartar emetic to a succession of small ones composed of cantharides. The latter occasion strangury and much irritation. But the fact is, that the operation of the one is very different from that of the other. The eruption of pustules, and the production of vesication, are very dissimilar processes, and effect very different actions in the animal economy. We will not renew the discussions respecting the efficacy of mercury in this disease. If we are acquainted with the sentiments of writers and practitioners generally, on this point, we will say that the utility of the medicine under consideration, is put beyond the possibility of cavil. It is true that some have recommended calomel in large doses—some in small. Perhaps there is little difference in the ultimate effects of both plans. When the head is affected, there is usually such torpor of the bowels, that large doses of medicine produce no more action in the intestinal canal than much more diminutive quantities. Hence the great deception into which practitioners may be led. Dr. Monro has given us the following document from his father, with which we will conclude this analysis.

"After mentioning twenty-two cases of this disorder, in which he had unsuccessfully employed mercury, he states:

"'As in the greater number of the above cases, the disease had made considerable progress before I was called; and, as most of the patients survived but for a short time thereafter, the effects which the mercury may have, if given on the first appearance of the symptoms, are by no means fully determined. And, as I have repeatedly found, in other dangerous species of the natural encysted dropsy, particularly in hydrothorax and ascites, that mercury combined with squills or other diuretic medicines, in such quantity as to salivate in a slight degree, contributed much to the relief or cure of the patient, I would recommend the further trial of it in hydrocephalus. At the same time, considering the importance, sensibility, and delicate texture of the parts which are affected, and total failure in the cases I have described, I cannot help suspecting that several late writers are much too sanguine in their expectation of removing hydrocephalus by the use of mercury.'"

We must now close this article, promising to furnish our readers with some important information from the same work, respecting certain pathological conditions of the brain, in one of our succeeding numbers.

We have restricted ourselves, in this paper, almost entirely to the humble, though not the less useful, labour of analysis. But the talented author will excuse us, if we venture to dissent a little from him, as to the part which inflammation takes in the serous effusion which is usually found in the disease under consideration. We have often expressed our opinion, that it was too much the fashion to consider phlogosis as the root and branch of the effusion. But we cannot, consistently with our own observations, go the length which Dr. Monro has gone, in the opposite view of the pathology of hydrocephalus. We are convinced that, in a great majority of cases, the effusion which we find in the heads of infants who die with the common symptoms of hydrocephalus, is the result of an inflammatory process more or less acute—and, consequently, that our remedial measures should generally embrace local depletion from the head—especially in the early stage of the disease. At the same time, we are glad to have the

authority of Dr. Monro, in support of a doctrine which we have long advocated—namely, the possibility of watery effusion from other causes than inflammation.

Although we mean to return to Dr. Monro's work again, we cannot take leave of it, without expressing our sincere esteem for the amiable and talented author. The small volume which he has now published, abounds in rich materials, without the slightest tincture of wild hypothesis—arrogance—presumption—or the prevailing sin of the day—censure of the opinions or practice of his brethren. Dr. Monro is a worthy representative of the old school of amenity, liberality, and true love of science? If primus et secundus Monro could start from their marble cerements, and view the distractions of medical society at the present moment—if they could read the malevolent and ignorant effusions of a Scotus, indited in the Intellectual City—they would, doubtless, join in the doleful verse of their countryman, Smollett—

"Mourn, hapless Caledonia, mourn—
Thy banished peace—thy laurels torn!"

From the Lancet.

ON A VARIETY OF CLUMP FOOT. By M. Holtz, *of Strasburg*.

Among the malformations of the feet, some are congenital, others occur after birth, generally before the age of puberty, and sometimes without any very evident cause. The most frequent congenital distortion of the foot, is that which the ancients called *varus*, when the foot is turned inwards; the second distortion is that in which the foot is turned outwards; it is called *valgus*, and is extremely rare. But we find no where another variety of clump-foot in which the point of the foot is turned backwards, so that the person walks almost wholly on the dorsum of the foot.

There was for twelve years, in the Civil Hospital of Strasburg, a pensioner, a watchmaker by trade, who presented this variety of congenital distortion in both feet. His legs were thin, and the calves scarcely developed. Both feet were turned backwards, as from forced extension. The dorsal surface had become the inferior, and the plantar surface the superior. Walking was not painful; he could march easily and without support. He did not suffer the inconvenience of those whose feet are turned inwards, and who are obliged to raise one in order to advance the other. The knees were always a little bent, so as to maintain the centre of gravity in equilibrio. He uniformly rested his weight on the tarsus, rather more on the external than on the internal surface of the foot; the metatarsal bones and the toes did not touch the ground when he remained stationary. He wore common half boots, the heels of which were turned forwards, and the points backwards; they were laced at the back part.

In 1825, at the age of 64, he was affected with pulmonary catarrh, for which he was placed under the care of Professor Lanth; after a short time the man died, not of the complaint for which he was admitted, but of cancer of the stomach. The feet presented the following peculiarities:—when compared with the feet of persons whose walk is natural, they were small, and the skin covering the part which rested on the ground, was callous, and folds in different directions were observed on the plantar, which, in this case, was the superior surface. In order that the description may be as clear as possible, I will examine first the state of the bones, then that of the ligaments, and, lastly, the muscles.

The bones of the leg were well formed, and in their natural relation to each other. The foot was turned backwards, which occasioned the astragalus to be dislocated forwards, the os calcis forwards and outward, and the cuboid downwards on the calcaneum; but there was no anchylosis nor change in the state of this bone. The dorsal surface was very convex, excepting at the spot which touched the ground, whilst the inferior was very concave, without either of the edges appearing shortened or changed in its figure.

The os calcis, instead of touching the ground and completing posteriorly the plane on which the foot rests, was drawn upwards by its posterior part, into which the tendo-achillis is inserted, and at the same time directed outwards. The superior articulating surface was not in direct and immediate relation with the inferior surface of the astragalus; but it corresponded to its external surface, where, in the natural state, the external ancle is situated, without, however, touching this surface in its whole extent. The superior articular surface of the astragalus was turned directly forwards and a little downwards, instead of being in contact with the articular surface of the tibia; its posterior surface also looked forwards, and the tibia rested on the inferior, in a great degree, and the small process of the calcareum. The inner surface was free, and gave attachment to ligamentous fibres; it was not in contact with the internal ancle; the outer surface looked towards the superior surface of the os calcis. The tibia rested on the inferior surface of the astragalus, and the inner ancle was situated above the scaphoid; the outer rested between the astragalus and os calcis, on a part of the concave surface placed above the tendo-achillis, and on the inner and back part of the inferior surface of the astragalus. The connexions of the scaphoid with the astragalus were more natural; the scaphoid was, however, turned a little backwards. The cuboid rested by its posterior on the inferior surface of the os calcis. The articular part of the astragalus and os calcis gave attachment to ligamentous fibres. The three cuneiform bones, the metatarsal bones, and the toes, had not experienced any sensible change in their position.

The articulation between the os calcis and astragalus differed, in many respects, from the natural state. The articular surfaces of these two bones were not in contact with each other:

a space existed between them, at the posterior and outer part of the foot; this space was filled by a fibrous and ligamentous substance.

The muscles of the foot had undergone some remarkable changes. The tendo-achillis, which was strong and thick, kept the astragalus separated from the ground, at the same time that it drew the foot inwards and backwards. The tibialis anticus, from its direction and attachment, drew the foot upwards and inwards. The tibialis posticus drew the whole foot backwards and upwards, principally its inner edge. The flexors acted in the same way, as well as the muscles which are attached to the plantar aponeurosis. The abductor minimi digiti was not relaxed, as it is said to be in clump-footed persons, and as one might be led to imagine it would in this case, but it was contracted so as to draw the outer edge of the muscles inwards and upwards. The extensors were weak and elongated, and, consequently, did not counterbalance the action of the flexors.

From what I have said of the state of the parts, both hard and soft, which enter into the composition of the foot, and which contribute to its motion, it will be seen that the principal cause of this irregular arrangement was the dislocation of some of the bones of the tarsus, and that the ligaments and muscles only acquired consecutively their unnatural situation.

Scarpa pretends that the astragalus is not concerned, at least, in common cases, in these deformities; and he feels assured that the other bones of the tarsus are not dislocated, as is generally supposed, but only turned on their maller axis. This case differs altogether from those which I have observed, not only in the degree of turning of the foot upwards, and its direction backwards, but also from the astragalus being evidently concerned, as well as from the dislocation of this bone, of the os calcis, and cuboid. The attachments of the ligaments were little altered from the natural state; their direction only was changed, and consequently their action; which, although weak, tended to increase the deformity, and to retain the bones in their unnatural situation. The muscles had not any unnatural attachments; but the contraction of some, and the weakness of others, from their great extension, impeded the return of the foot to the normal state. Moreover, the tendons having an unnatural direction, the contraction even of the weakened muscles, such as the extensor communis digitorum, and extensor proprius pollicis, tended to increase the mal-position of the foot.

The causes which may determine or favour the development of like deviations of the feet *after birth*, are well known. But those which give rise to these deviations in the womb of the mother, are involved in great obscurity. Scarpa, Boyer, Delpech, thought that they had discovered the first cause of the irregular formation of the bones of the tarsus, or even of a single articular surface, viz. in the want of equilibrium between the muscles which move the foot, in the shortness of some of these muscles, in an unnatural insertion of some of their tendons, &c. This, however, does not completely explain it. In the old man, who was the subject of my observations, no unnatural attachment existed; the bones were well formed, some articular surfaces were bare and rough, which, however, was not concerned in the cause of the deformity. There was certainly a want of equilibrium in the action of the muscles, which is evident, from the description which I have given; but nothing proves that the relaxation of some, and the increased action of others, had been the cause of this considerable turning of the foot upwards.

If we examine the fœtuses of different ages up to the ninth month of pregnancy, we observe a remarkable tendency of the feet to turn inwards. The legs bent and crossed, the feet resting in front and on the buttocks; the soles directed against them; the external edge looking downwards, and the point inwards. This state of parts is more marked, according to the youth of the fœtus; it is very well seen in a young born infant, even until it has begun to walk.

The cause of congenital distortions of the feet consists, then, in a change in the direction of these parts, produced by their mal-position in the womb of the mother, and rarely in an unnatural structure of the parts.

I regret to say, that we have no machine applicable to the cure of this kind of distortion.

From the London Medical and Physical Journal.

CASE OF EXTRA-UTERINE FŒTATION.

By — Tilt, Esq.

Sophia Lickish, æt. thirty-seven, was twice married; bore four children to her first husband, and, six years after her second marriage, again became pregnant. During her former pregnancies nothing unusual occurred, and her confinements were reported to have been short and easy; and nearly three months of the fifth had elapsed before any accident gave rise to untoward symptoms. While in the country, at the commencement of September 1827, she was exposed to unusual exertion in drawing water from a deep well, during which she felt as though something internal had given way; which was immediately followed by discharge of blood per vaginam, vomiting of bloody fluid, impaired appetite, and tenderness of abdomen. To these were shortly added retention of urine and constipation of bowels. Being no longer able to discharge the duties of her situation, she returned to her husband in town. Medical aid was now procured: her water drawn off with the catheter, and her bowels opened by medicine; which course of treatment was found necessary for a considerable time, when, the symptoms somewhat lessening in violence, fewer purgatives were required, and pressure above the pubes was found sufficient to empty the bladder.

Upon the 28th of January, 1828, I first saw her. She was in bed, to which she had been constantly confined since the accident. She was much emaciated, her general health very bad, and her strength nearly exhausted by frequent vomiting, a copious fetid discharge from the vagina, and incessant abdominal pain, which she compared to lingering labour-pains. She now considered herself more than seven months gone, and was unusually large. Although the symptoms which existed, when conjoined to the history of her case and her present appearance, left little doubt in my mind as to its real nature, yet, anxious to neglect nothing which might assist my diagnosis, I requested an examination, which was readily granted; but nothing could be satisfactorily ascertained. The os tincæ could be nowhere felt; no part of the child was recognisable; and a tumour of considerable size lay pressing against the sacrum. Two medical friends (Dr. H. Davies and Mr. Clark,) were also allowed to examine her, but nothing more was elicited. These circumstances, viewed in connexion with the symptoms above mentioned, led us to conclude that the child was extra-uterine, and likewise to suspect retroversion of the uterus.

By the administration of small opiates, the irritability of her stomach was diminished, the intestines were kept open with castor oil, and her health gradually improved under a soothing plan of treatment.

Up to the 10th of February, nothing occurred of any importance; but, on the morning of that day, without any apparent cause, the vomiting returned; pressure above the pubes relieved the bladder with difficulty; her countenance became much altered; and the motions of the child, of which she had been sensible for the last three months, together with the vaginal discharge, now ceased.

At the suggestion of Dr. H. Davies, the opiate was conjoined with chalk mixture; and a blister was applied to the epigastrium, on account of the irritability of the stomach, which had again returned. Although the blister did not rise well, and the draught was rejected, she felt relieved. On the day following, effervescing draughts, occasionally administered, with opium and capsicum, kept the stomach quiet, and procured some rest at night. Her bowels acted freely this evening without medicine, and the next morning her urine flowed, for the first time, without pressure over the pubes. Notwithstanding, however, these slight signs of improvement, she continued gradually to sink until the 14th, when she died.

An inspection of the body being a great desideratum, the friends were consulted, and permission was accordingly obtained. Dr. H. Davies and Dr. Dill were present at the examination, in which I was assisted by Mr. Bell, a friend of the former gentleman.

Post-mortem appearances.—The skin was universally jaundiced; the feet slightly œdematous; the abdomen very much, but irregularly, enlarged, being considerably fuller on the left side; the mammæ were flaccid and contained milk; and the external parts of generation were as tumid as in natural cases of labour. By moving the hand carefully over the surface of the abdomen, the head of the child could be distinctly felt, lying a little above and to the left of the umbilicus, and one of its extremities (whether hand or foot could not be satisfactorily determined,) was easily recognised resting above and to the right of the head. By tapping the surface over these two points with the finger, fluctuation was very palpable; and the tenuity of the intervening integuments, apart from the position of the fœtus and other corroborating symptoms, rendered the nature of the case completely evident. The arch of the colon was distinctly traced running across the epigastrium, immediately above the fœtal mass, and the abdominal covering was, by its pressure outward, moulded into a form somewhat similar to itself.

Upon making a longitudinal incision through the parietes of the abdomen, it was found that a large quantity of fluid lay in the peritoneal sac, and that the dissection could not be prosecuted with the necessary precision until it was removed. An opening was, therefore, made in the lowest part of the right lumbar region, through which much bloody fluid escaped, and the remainder was extracted from above by a sponge, the whole amounting to four or five pints.

A transverse incision was now made, and the flaps everted with considerable difficulty, as the peritoneum was glued somewhat closely to that portion of the membranes lying over the child's head.* The contents of the abdominal and pelvic viscera being now fairly exposed, a tolerably minute inspection furnished us with the following detail:

The peritoneum was highly inflamed, very dark, and considerably thickened. The small intestines were pushed up into the bosom of the diaphragm, and the omentum, which was wasted to a mere shred, lay reflected over the stomach. The liver was usual in size, but its peritoneal envelope, in common with that of the other viscera, was as much changed in texture as in aspect: nothing morbid, however, could be discovered in its internal struc-

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* I think it is more than probable that, had the woman survived much longer, the abdominal integuments would have suppurated at this point, allowing the child to escape in detached pieces. See American Magazine for 1746, where a case is given in which several parts of a child came thus away, after remaining in the abdomen for several years, during which the woman bore six children: she, however, died. See likewise Journal de Med. Chir. &c. tom. xiv. page 443, for a case in which a complete skeleton was removed from the abdomen, through an aperture in the umbilical region formed by sloughing. The patient perfectly recovered, and ever after menstruated through this opening.

ture, and the gall-bladder and biliary ducts appeared natural.

The uterus was seen lying obliquely across the pelvis, with its fundus in the right lumbar region, and its os tincæ rather above, and to the left of the symphisis pubis. Its size was above that of its ungravid state: it felt tolerably firm, and was externally very dark coloured. Between it and the intestines, principally in the umbilical and left lumbar regions, lay the fœtus involved in its membranes; the placenta being exterior to, and betwixt them and the arch of the colon. A fillet of fibro-ligamentous substance, about an inch and half in width, ran down from the inferior surface of the arch of the colon over the membranes, and was inserted into the superior edge of the left ligamentum latum. This band being divided and turned aside, the subjacent membranes were carefully opened, and the fœtus exposed to view. It was smaller than the average of full-timed children, but must at least have been eight months old. It lay upon its left side, with its lower extremities stretched over the sacral promontory into the posterior pelvic cavity; and its head, which was somewhat reclined, resting upon its left arm. Its face thus looked towards the diaphragm, and its chest was presented to the left side. The left side of its head and face was flattened, in consequence of pressure upon the arm, but, excepting this accidental deformity, it seemed perfect and well shaped. As the motions of the fœtus had not been perceived for five days previous to the woman's dissolution, it was believed that the child had been so long dead; but, from abrasion of the cuticle and other signs of decomposition, it is likely that this event happened earlier than was suspected. There was no more than two or three ounces* of fluid in the membranes, which was of a very dark colour, apparently from admixture of blood. The chorion and amnion were perfectly natural, differing in nothing from those formed in the uterine cavity; and exterior to these lay the sac,† or ventral uterus, within which the fœtal mass, excepting the placenta, was contained. The walls of this sac were about three lines thick, of considerable strength, perfectly smooth internally, and tenaciously adhering to the neighbouring parts. It was attached to both the broad ligaments, descended along the posterior surface of the uterus in company with the subjacent peritoneum, was reflected over the sacral promontory, adhered in its ascent to the sigmoid flexure of the colon on the one side, and to the psoas muscles on the other, rose upon the lumbar vertebræ, swept over the internal surface of the placenta, and, turning a little above the umbilicus, ran down over the membranes to the ligamenta lata. It was nowhere connected with the chorion, and yet no space intervened between them. Above it, and considerably to the left side, lay the fillet before described.

The placenta was of enormous size,* and very extensively attached. Its width was greater than usual, it was five inches in thickness, and could not have weighed less than five pounds. In structure it differed little from those met with in ordinary cases; perhaps, it was somewhat firmer. It adhered with great tenacity to the sac, excepting in the inferior part on the right side, where it was detached for a few inches, the intervening space being filled with coagulated blood.† Its supply of this food must have been very liberal, as its connexion with blood-vessels was very extensive. The right, and especially the left mesenteric and emulgent vessels seemed to be the main fountains from which nutriment was drawn for the fœtal system; but, besides these, there were many minor sources, since it adhered throughout to the inferior surface of the arch of the colon, a great part of the mesentery and meso-colon, to portions of the small intestines, and two or three of the superior lumbar vertebræ. It lay across the spine, but unequally, the greater part of it being on the left side; and the surface, by which it was connected with the mother, faced the diaphragm, from which it was separated by the intestines which had been forced up into the bosom of this muscle.

Nothing could be discovered amiss in the structure of the uterus, which was about the size of one in the fourth month of pregnancy.‡ Externally it was inflamed, and presented the same darkened appearance with the abdominal viscera. We have already stated that the sac adhered to its posterior surface, and, upon separating this membrane, for which considerable force was necessary, slight vascularity appeared behind and a little to the left of the right lateral ligament, but there was not a vestige of cicatrix, nor did any thing exist to sanction the idea of rupture of this organ. The os tincæ was dilated, and two

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* The average quantity of water contained in the amnion in ordinary cases is about two common pints.

† A case is recorded in the seventh volume of the New-York Medical Repository, page 221, where a sac of a very similar character was found, and the anterior portion of which, as in the present instance, adhered to the peritoneum lining the muscles of the abdomen.

* In cases of extra-uterine fœtation, the placenta is much thinner, and, although more extended than uterine placentæ, is considerably lighter and less bulky. I am not aware that there is any case recorded in which the placenta equalled the present, either in weight or size.

† The hemorrhage which resulted from this partial detachment of the placenta had, no doubt, accelerated the death of this woman; and it was the blood, then effused, that darkened the fluid which before lay in the peritoneum.

‡ It is generally found more or less enlarged in such cases.

fingers could be admitted with ease. The cervix appeared slightly vascular, but the internal surface of the fundus was pale and smooth. The right fallopian tube was pervious, of natural size, and complete; but there was no right ovarium to be perceived. The left ovarium was small, and contained several vesicles. The left fallopian tube was somewhat enlarged, and about the middle of its superior surface, near to the insertion of the fillet before mentioned, its coats were ulcerated for an inch and a half.* Upon either side of this opening it was pervious, and its caliber throughout larger than that of the right. The vagina was quite healthy.

Several questions of importance must suggest themselves to the mind on reading the above detail; and the first in interest undoubtedly is, how did the fœtus make its way into the abdominal cavity? Did the ovum remain in the ovarium, and did the ovarium, by gradually enlarging, constitute the sac in which the fœtal system was contained? Or did the ovum, in leaving the ovarium, fall into the abdomen; not being grasped by the fallopian tube? Or did the ovum, during its passage through the fallopian tube, escape into this cavity? Or, finally, did it reach the uterus, and, by retroversion of this organ, constitute one of those cases described by Dr. MERRIMAN?†

It will be admitted, I presume, that the answer must be found in some one of these suppositions; and, although there are many circumstances of obscurity accompanying the history as well as the dissection of the case, and there may be arguments advanced in support of each, several reasons have induced me to conclude that it was through the left fallopian tube the ovum escaped into the abdomen.

We have no reason to believe that its escape was occasioned by the corpus fimbriatum neglecting to embrace it on its departure from the ovarium; and there exists no evidence to show that there ever was retroversion in this case. During the first six months of pregnancy, no examination per vaginam was made; and, although retention of urine and constipation of bowels are presumptive of this misplacement, yet these symptoms did not occur until the third month of pregnancy, when the fœtus, membranes, and placenta had evidently arrived at an unusual size, and, by their position behind the enlarging uterus, will satisfactorily account for their appearance. It is true that several medical gentlemen had examined her some weeks before her dissolution, and suspected retroversion; but the absence of the os tincæ, and the tumour that pressed upon the rectum, the only circumstances on which our diagnosis was founded, were otherwise explained by inspection after death, when the uterus was found in a position the reverse of that assumed in retroversion.*

The absence of the right ovarium was the only fact favourable to the supposition that this was a case of ovarium pregnancy; and, independent of the impossibility of determining whether or not it did ever exist, I think there are several circumstances tending to show that this solitary fact cannot be regarded as conclusive.† The fœtus lay almost entirely on the left side, and it was the right ovarium that was absent;—the adhesions of the sac, in which it was contained, were much more numerous on the left than on the right side;—the fillet which bound down the membranes was inserted into the left fallopian tube, near to the point of its ulceration, and lay entirely in the left side; and the greatest portion of the placenta was attached to viscera belonging to the left side. Besides, had this been an ovarian case, why did the woman pass the first three months of pregnancy in health and ease; and why did symptoms of disorder, when they did appear, come on instantly and with violence? Had the ovum never left the ovarium, the gradual increase of this latter organ would have prevented the sudden approach of constitutional derangement; and, although the disturbance occasioned might have been ultimately great, it would not have commenced with violence.

We are, therefore, inclined to believe that the ovum escaped, during its passage through the left fallopian tube, into the abdominal cavity, and was gradually invested with membranes and a false uterus. Could it be shown that the right ovarium had never existed in this woman, this view of her case would be demonstrably true, seeing that the ovum must have been impregnated in the left ovarium, and that the left fallopian tube was found ruptured. But, as we have nothing beyond presumptive evidence that such was the case, although highly probable, it cannot be considered certain.

The position of the child, and the strong and numerous adhesions of the sac in the left side,—the easy and natural course of her

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* A case is detailed by Mr. TUCKER, in which the left fallopian tube was ruptured about the same part; and the death of the woman proceeded from partial detachment of the placenta.

† See his Dissertation on Retroversion.

* It is extremely difficult, perhaps impossible, in some such cases, to determine when retroversion exists, and not a few have experienced the same difficulty with ourselves. See Medical Commentaries, vol. xx. page 254; London Medical Journal, vol. v. page 96; Medical and Physical Journal, vol. xi. page 293; Transactions of a Society, &c. vol. ii. page 287.

† Ovarian cases are not very common, and it seldom happens that the ovary reaches a large size. "It either bursts early, or inflammation and abscess take place, or the fœtus dies and is converted into a confused mass, or it excites dropsy of the ovarium." (BURNS' *Midwifery*, page 193.)

pregnancy for the first three months; the sudden supervention of untoward symptoms; the feeling of something having given way internally while using violent exertion, instantly followed by derangement of the whole system, and a bloody discharge per vaginam; the continuance of this derangement, with increasing violence, from this period to that of her decease; the fact that the ovum does not leave the ovarium until six weeks or two months after impregnation, and the near correspondence of this period with that which elapsed prior to the accident; the ruptured condition of the left fallopian tube, and the formation of the fillet at the margin of the rupture; the appearance of the sac being that of a false membrane, and not of a bag covered with the peritoneum; the presence of the greatest part of the placenta in the left side, and the absence of the right ovarium;—are the principal circumstances by which we have been influenced in forming our opinion. Whether the ovum lodged for some time in the tube before the accident, or had merely proceeded so far through it when the accident occurred, are circumstances difficult to determine. Perhaps, the larger cavity of the left tube, and the slight difference* which existed between the period that elapsed from the commencement of pregnancy until the injury was sustained, and that generally occupied before the ovum leaves the ovarium for the uterus, are circumstances favourable to the first supposition, yet cannot be deemed sufficient to establish the point.

That there would have been some discharge of blood after the accident might have been expected, but that this discharge should have been continued unto the period of the child's death, when it ceased, appears strange and inexplicable. Was this the menstrual fluid,† or some morbid accidental discharge? If the former, the ordinary course of nature in such cases was reversed; for, during the life and growth of the child the menses are discontinued, but return after its decease; and, if it were a morbid product, where was its source? Was it secreted by the vagina, or did it come from the uterus? or could it possibly have drained from the abdomen through the ruptured tube, as a part of that fluid, some of which was taken out of it after death? The internal surface of the uterus and vagina, excepting a small portion of the cervix of the former, was pale, and betrayed no symptoms of having given rise to any such secretion, and the external characters of both these fluids were very similar; but, admitting that they were the same, we are furnished with no reason why the discharge was discontinued upon the death of the child, and, moreover, it is very doubtful whether fluid existed in the abdomen during all the time which elapsed from the occurrence of the accident.*

Indeed, the entire case is so perplexing and obscure, that almost every part of it may be considered a subject for discussion and difference of sentiment; and, acting under this conviction, while for reasons adduced we have defended the views now given, all the minutiæ of the case are laid before the reader, that he may have materials from which to draw his own conclusions.

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* Although the period above specified is the average time spent by the ovum in the ovarium, yet it may certainly remain longer; but, supposing that two months of pregnancy had passed before its departure, a few days only would be the difference between that period, and that which elapsed between conception and the date of the accident, which occurred some time during the third month.

† Cases are upon record in which the menses flowed for several months during pregnancy. (Vide Burns, page 187.)

* From the inflamed condition of the peritoneum in this case, it is probable that the greater part of the fluid found in the abdomen after death, was the effect of peritonitis; and it is not to be conceived that such a disease could have existed long prior to the decease of the woman.

From the London Medical Gazette.

M. FERRUS'S TREATMENT OF INSANITY.

It has been often said that no physician has more followed the precept of Hippocrates, "to permit philosophy to take part in the study of medicine," than Pinel; and of his works, none have so strong a title to the term *philosophie,* as his Treatise on Insanity. Pinel threw around this dreadful class of diseases the light of reason; he traced the symptoms in a profound manner, distinguished the various shades of the disease with nicety, and overthrew all the ancient superstitions which associated these maladies with the powers of the demon, or the consequences of fatality. It is by pursuing the steps of this great master, that M. M. Esquirol and Ferrus direct the treatment of mental diseases. This malady, consequent upon organic lesion, is submitted to the general laws of Therapeutics. Whether, according to M. Esquirol, and some of the disciples of Pinel, the brain is not the organ always primarily affected; or whether, on the contrary, according to Gall, Georget, and Spurzheim, it is invariably the first and only seat of the disease; this important organ is now, at all events, the especial object of the physician's attention.

In all the establishments devoted to the cure of the insane, and particularly at Bicêtre, madness is, without doubt, considered as an affection of the brain, whether it be idiopathic, or the result of a distant morbid influence;—but what is the nature of this affection?—what organic state of the parts constitutes it?—There are two modes of considering this point.

According to some, madness is an inflammatory disease; whilst others think that it is a nervous malady—that is to say, an aberration from the healthy function of the organs of the encephalon, without any appreciable physical modification in those organs. To which ever of these opinions M. Ferrus leans, his practice would lead to the belief that he is guided sometimes by one view and sometimes by the other; and since his practice is attended with numerous instances of success, it may not be unfair to conclude that these opinions relative to insanity, are not incompatible with each other. In the first accession of mania in young and vigorous subjects, and especially when the complaint appears to be deducible from some external cause; when the phenomena of reaction are fully developed; when the congestion in the brain appears to be decided, or intense; M. Ferrus practises, and always with advantage, a large bleeding either from the arm or neck. The effect is, as it were, instantaneous; the delirium diminishes immediately. The bleeding may be repeated even three or four times during the same attack. Solitude, strict diet, diluents, and warm baths, complete this plan of treatment. Thus it appears that this species of mania is treated like acute and intense inflammations of the thoracic or abdominal viscera.

Those who think that insanity is the consequence of a latent chronic inflammation of the brain, or its membranes, will see, in the practice followed at Bicêtre, facts which may tend to support their opinion. With those maniacs who are moderately calm, whose constitutions announce but little energy, and yet in whom the local pain and the heat of the head are intense, M. Ferrus applies leeches to the temples, or cupping glass to the sutures, or the actual cautery to the nape of the neck. Purgatives, pediluvia with mustard, also assist the action of the local bleedings in such cases. This treatment must be continued with perseverance; but it must be admitted that this is not the plan which, at Bicêtre, is found to afford the greatest sum of success. It is only applicable to those in whom the disease has lasted a considerable time; and among these are numbers in whom the complaint is innate and hereditary. Thus it becomes necessary to change the temperament of the individual; and medicine, it must be confessed, has but little power in that respect.

As we have before hinted, there are many cases wherein M. Ferrus departs from the antiphlogistic plan. We have often seen antispasmodics, and even narcotics, prescribed at Bicêtre; such as camphor, in small doses, either the fœtid gums, the extracts of hyoscyamus, stramonium, belladonna, &c. It is particularly in monomania that these measures are had recourse to; and especially in those cases of monomania in which the hallucination affects some of the sensorial powers. The subjects of this form of mania are generally of a weakly constitution, with effeminate features and pale skin, the brain being well developed; in short, they present the phenomena assigned to the nervous temperament; and it may be remarked, that the frequency of insanity in persons of this organization, has not a little contributed to establish the opinion that this disease is only an exaggeration or perversion of the action of the brain, purely functional.

The practice of Bicêtre, in fine, may teach us that in insanity, (as in many other diseases, the nature of which, either inflammatory or nervous, is said to be much better known,) the antiphlogistic and antispasmodic methods of treatment have numerous points of coincidence; and that, consequently, the success of a plan of treatment, of one kind or other, does not permit us to presume upon the absolute nature of this singular disease. If the advantages derived from medical treatment appear to lead to this result, there would be still, in the relation of cases of mania, a considerable number which could not be so classed. Such are those in which moral treatment alone has been employed. Affectionate remonstrances, solitude, labour demanding little intellectual exertion, and in a different direction to the tendency of the disease, are therapeutic means which bear little analogy either to bleedings, opiates, &c. However, solitude for a diseased brain may be compared to rigid diet in the phlegmasiæ, or to repose in diseased joints, &c. &c. The same may be said respecting the admission of certain ideas, or a selection of moral impressions. In a disease of the digestive organs, you select some particular articles of food, observes M. Ferrus; well, in the same manner, in insanity we permit only certain sensations to reach the brain, by directing the attention of the patient towards sentiments, or towards intellectual operations, opposed to those which are diseased. It is, therefore, of much less consequence, continues this gentleman, to know the nature of madness, than to understand what modifications of the animal or intellectual faculties constitute it.

From the London Medical Gazette.

HERNIA IN INFANTS.

To the Editor of the London Medical Gazette.

Sir,—On inspection of M. Dupuytren's case of strangulated hernia, published in a recent number of the Medical Gazette,* it seems, at first sight, scarcely possible to doubt that it would have been reducible, had faintness been produced. I cannot boast of having managed this disease at so early a period of life as twenty days; but I (as many others doubtless have) have met with strangulated hernia in infants as young as six months. The patients were bled to faintness, and the hernia became readily reducible, or returned of itself. It is matter of course, that where the strangulation has taken place, the constant crying of the child will render its return next to impossible.

* Jour. For. Med. Vol. I. p. 555.

The act of fainting, in most instances, is favourable; and a state of insensibility, both in adults and infants, is also favourable to the efforts of the surgeon, by checking the efforts of the patient.

Nothing is more easy than to criticise the treatment of a case one has not seen. I think it would, indeed, be well if it were a maxim among us at all times, not to condemn the former treatment of cases, unless the treatment were conducted under our own eye: it is next to impossible to decide on the merits of former practice from the accounts of our patients; nor will their present state very commonly give us a very certain criterion by which we may judge of their former condition. It should be a part of medical morals, never to give any opinion excepting on the present circumstances, of which alone we have a sufficient cognizance to come to any thing like a right judgment.

My chief object for troubling you on this occasion is, lest a tyro, having seen that strangulated hernia in an infant has been treated by so great a man as M. Dupuytren, solely by the application of leeches, might be induced to consider their application sufficient (which, *perhaps*, in this instance, it might have been;) while I think all practitioners will agree with me, that bleeding by a full stream is as much the remedy in this case for infants as for adults; and, so far as the unfrequency of the occurrence will admit of my forming a judgment, in proportion a much more effectual remedy. Indeed, I can scarcely conceive the possibility of its failing, if the remedy is resorted to during the bleeding. Should bleeding to faintness not succeed, I am sure the operation, considering the remarkable irritability of the infant constitution, should be resorted to instantly; or, at all events, very early. In this disease, the experience of the late Mr. Cline's life can never be too frequently brought forward: "I have known," said he, "many die of performing the operation too late—not one by its being performed too early." Pupils should be reminded, that if blood cannot be obtained in stream from the arm, which it may in most instances (and I own I think in acute diseases it is the better practice,) it may always be obtained from the jugular vein.

I am further led to offer this criticism, that I may call the attention of practitioners to an accident I have met with a few times, and which may possibly have been overlooked, viz. the occasional intrusion of small portions of intestine or omentum at the navel, where the vacancy is only partially filled up. This I have found to be a frequent cause of the tormine to which infants are especially liable during the month. I was led to observe this circumstance, which I am even confident occurs much more frequently than could be supposed, by the following accident:—I was called to a child in the month, of whom I had assisted the mother in the delivery, and in whose respiration I had found no fault; it had shrieked out, and fainted suddenly away then for the third time; it was in all respects healthy. The child had soon recovered, but the last fainting fit had lasted longer than the former attacks. I ordered the child to be stripped (a necessary step always, if a practitioner would really understand the diseases of infants,) and perceived that while it cried, the naval protruded somewhat more than it does naturally. On pressing the part, I felt a slight gurgling under my finger. A cork pad was placed over the navel, secured by an adhesive bandage, and the symptom never returned. In this instance, it would seem that temporary pressure of the intestine produced the faintness.

This circumstance has led me to examine the abdomen in children about this age, where they have been suffering from tormina. I have given instant and permanent relief, again and again, by the use of this bandage. I strongly suspect that many a diarrhœa occurring in the month, where the infant is unfed, is attributable to this cause, viz. the occasional pinching of the intestine, and a scarcely perceptible vacancy: its frequent intrusion produces slight inflammation, which nature relieves by instituting a purging. It is easily perceived how pain should first be created by the accident, how the consequent irritation should produce fits of crying, and the crying and the pain should at length become cause and effect alternately.

Of one thing the reader of this communication may be assured, that I have relieved several diarrhœas occurring during the earliest periods of infancy, by the application of the cork pad and adhesive bandage, without any other remedy, where the infant has been unfed, and the mother in health.

One does not readily see why diarrhœa should occur, unless from such a cause, which appears to me sufficient to account for the disorder; that it does not continue, the subsequent filling up of the vacancy will account for.

Should this trifling communication, Mr. Editor, assist in relieving the troublesome sufferings in infants, or prevent the early introduction of medicaments (often opiates) into the lying-in chamber, I shall feel I have been serviceable; and be much obliged by your insertion of it in your publication.

I have the honour to be, your obedient servant,

P. F.

From the Medico-Chirurgical Review.

A PRACTICAL ESSAY ON STRICTURE OF THE RECTUM, *illustrated by Cases, showing the Connexion of that Disease with Affections of the Urinary Organs and the Uterus—with Piles and various Constitutional Complaints.* By Frederick Salmon, Surgeon to the General Dispensary, Aldersgate Street, and formerly House-Surgeon to St. Bartholomew's Hospital. Octavo, pp. 188. London, 1828.

It is no doubt true, that strictures in the urethra are infinitely more frequent than strictures in the rectum. But when these last

do occur, (which, by the bye, is by no means a rare case,) they are a great deal more distressing to the patient, and detrimental to the constitution, than the former. The stomach and bowels are organs of higher importance in the animal economy than the kidneys; and, consequently, whatever disturbs their complicated functions, whether in the process of digestion, or in the evacuation of the fæcal remains, produces more serious and more numerous sympathetic disorders in the constitution at large, than any mechanical difficulty which the bladder may experience in the evacuation of the renal secretion. We are not unaware, indeed, that the irritation of an urethral stricture will occasion, in some people, considerable disturbance of constitution; but we do maintain, that these sympathetic disturbances are more distressing than dangerous—and that, in the worst cases, they are not to be compared with the effects of stricture in the rectum.

The object of Mr. Salmon is to prove, that stricture of the rectum is a very common disease, inducing other important affections—and that surgery furnishes us with means adequate to its removal or alleviation, if judiciously exercised. It is not our intention to enter into a minute analysis of Mr. Salmon's book in this place; but merely to touch lightly on some of the principal features of the work.

Under the head of "Causes and Kinds" of stricture in recto, Mr. S. examines the opinions of different surgeons. Mr. Bell considers the stricture as owing to a morbid change in the inner membrane of the intestine—not unfrequently about the inner edge of the sphincter ani. Mr. Copeland thinks the complaint may be produced by whatever excites inflammation or irritation in the inner membrane of the canal. Mr. White, of Bath, thinks the predisposing cause is the narrowing of the gut about the termination of the sigmoid flexure of the colon—which narrowing, he seems to look upon as sometimes an original malformation. Mr. Salmon is disposed to agree, in some measure, with Mr. White, on this subject; and thinks it illustrates a fact he has repeatedly noticed—that of several children in the same family being afflicted with stricture.

"Any cause, however, tending to produce local irritation in the rectum, existing for a continued period, may give rise to contraction: thus, habitual costiveness is among the most frequent causes of the complaint.

"Another, and I believe a common, cause of stricture, will be found in the administration of large doses of drastic purgative medicines, a practice peculiarly tending to irritate the bowels, and, by promoting increased contractile action, to impair their natural functions. Patients have informed me, that the first symptoms of the disease followed immediately upon taking violent aperients.

"Indigestion may give rise to stricture, the acrid state of undigested matter irritating the inner coat, and, in this manner, causing improper action of the intestine."

A peculiar constriction of the anus is sometimes the cause of stricture. Mr. S. has rarely found this constriction unattended with obstruction very high up in the rectum. In females, an occasional and afflicting source of stricture is an enlarged and tender condition of the uterus, of which we have a melancholy case now under our care. Every time that a motion is procured, by nature or art, the sufferings are dreadful, and can only be allayed by the introduction of laudanum and starch into the rectum. In these unhappy cases, little or nothing can be done by surgery. The only means of mitigating the pains, are, by emollient injections, to bring away the fæces in a soft state, and afterwards throwing up anodynes.

Strictures may occur from enlargement of the prostate gland—from piles, tumours, or excrescences—in short, from any cause, constitutional or mechanical, creating irritation in the rectum, and, thus, ultimately inducing spasmodic action of its muscular coat. In process of time, the complaint changes from spasmodic constriction into permanent stricture. Our author, indeed, thinks that the greater number of strictures are, at first, simply spasmodic, but that, in time, depositions take place between the coats of the bowel, that assist in preventing the natural action of the part, ending ultimately in induration and thickening, so that all trace of the natural structure of the gut is lost.

The third chapter of the work is on the Symptoms of Stricture. Insidious as are the signs of this disease, in its early stage, yet Mr. Salmon thinks they may be detected by close examination. We give the following extract from his symtomatology; observing, however, that many of the symptoms here laid down do frequently occur, independently of any stricture in the rectum.

"In its commencement, trifling irregularity of the bowels occurs, the motions being deficient in quantity, sometimes passed in small pellets, at others flattened like tape, or having the appearance of worms. Instead of the bowels being every day fully and freely emptied of their contents, a day, sometimes two, will now and then intervene without any evacuation occurring; or, what is more common, patients following their customary habits, will, at a particular period of the day, void, as they suppose, an adequate motion from their bowels; yet were they to examine the quantity, they would find it next to nothing. A sense of soreness is experienced at the anus, at the verge of which, after the discharge of the evacuations, the skin, from extreme rigidity of the part, frequently gives way, forming several small cracks or fissures distressingly annoying. Occasional pains occur in the loins and lower part of the back, which sometimes extend into the groins, particularly the left, the hips and thighs, imparting a sensation similar to cramp.

"Sooner or later, decided costiveness supervenes; opening medicines are resorted to, which, affording temporary relief, satisfy the patient and his medical friend. This state of

things will sometimes exist for a very extended period—for months, nay, even for years, people will from day to day administer opening medicines, increasing the quantity in proportion as their constant use and the progressive advancement of the disorder render them necessary, till at last, weary of the trouble and inconvenience, they relinquish them. Very speedily this irregularity is followed by a difficulty of passing the contents of the bowels; after going to stool, a sensation is experienced as if the rectum was not completely emptied; persons feel a disposition, yet have not the capability to pass more relief, and endeavour by violent straining to force out the contents of the gut, which proves of little avail, serving only to produce a discharge of blood, and a prolapsed state of the bowel. As the disorder advances, these symptoms progressively increase, till at last, many days together will pass without any relief occurring, though the patient will be tormented by frequent calls, and the most painful yet ineffectual efforts."

In other instances, (of which we shall presently give a remarkable example) accumulations take place in the colon, distending it to an enormous size; the whole alimentary canal becomes disordered; and inflammation of the bowels ensues, too often terminating in death. The various sympathetic disorders that are consequent on stricture in the rectum, cannot here be portrayed. The stomach, the kidneys, the bladder; in short, the general health, all suffer from this terrible disease.

Treatment.—Mr. Salmon divides this into constitutional and local. In the former, however, he includes leeching the anus, cupping the perineum, &c. The main object is attention to the bowels.

"No use of instruments can possibly establish a recovery, unless the bowels are brought to a free and comfortable relief daily; to accomplish this, two points should constantly be observed—first, that we do not load and annoy the stomach by the too plentiful administration of food—secondly, that we do not irritate the bowels by an injudicious use of purgative medicines. By adopting the plan of diet herein after advised, we shall avoid the first evil, but the administration of medicine is of equal importance. Here I cannot too strongly deprecate the common every day's practice of giving violent doses of purgative medicine; not only is no benefit derived from such treatment, but serious injury is frequently induced. When adopted in diseases of the rectum such must be the result, since large quantities of feculent matter are driven from the small intestines into the colon, already distended, as a consequence of stricture in the rectum, and highly irritated, and thus arise frequent and distressingly painful efforts to pass motions, the straining to accomplish which, may, in extreme instances, induce inflammation, or even rupture of the intestine at the sigmoid flexure."

Here Mr. Salmon introduces the case of a lady, who died from the effects of violent purgative medicines. In a severe attack of constipation, peritonitis supervened, for which drastic purgatives were exhibited. In straining at stool, she felt something give way internally, and quickly expired. On dissection, it was found that a cherry stone had lodged in the sigmoid flexure of the colon, where the passage was nearly obliterated by a stricture, close to which the gut had given way, and extravasation was the result. Castor oil, or the electuary of senna with sulphur, are no doubt, the best aperients, in cases of stricture. The use of injections are here of great importance; but the way in which they are employed often frustrates the intention of the practitioner. Half or three parts of a pint of thin gruel with a little castor or common oil, should be thrown gently up, and the patient should keep in bed for an hour or two afterwards, so that it may be retained in the bowels, and thus soften the fæces before they pass the stricture. It is certainly a matter of regret, as our author observes, that the fastidious feelings of some, and the want of consistent recommendation in others, should prevent the adoption of this salutary and harmless measure. We copy our neighbours in many of their frivolities and inconsistencies, yet disdain to adopt those habits and customs that are both healthy and cleanly.

On the subject of diet, Mr. Salmon makes many judicious observations, and shows himself a warm advocate of the Abernethian doctrines.

The Bougie.—Mr. Salmon thinks that the constitutional treatment, however careful, can be only palliative, without the bougie. The following directions are judicious, and they are too little attended to by surgeons in general, who introduce the bougie with little or no preparation.

"One or two hours previous to the examination of the rectum, an injection is to be administered of tepid poppy water, containing forty or fifty drops of laudanum, which will tranquillize the bowel, and remove any lodgement of fæces. The patient should also be requested to make water immediately previous to the introduction of the instrument. The rectum is first to be examined with the finger, to ascertain that there is no kind of obstruction near the orifice.

"The patient, if a male, leaning over the back of a chair, or the side of a bed,* should draw aside the nates fairly to expose the orifice of the bowel. A full sized bougie, not less than eleven inches in length, thoroughly softened, and well oiled, adapted to the shape of the passage through which it is to be passed, is to be introduced, with the convexity of the first curve towards the sacrum, in which way it is to be passed upwards and backwards about two inches† through the third portion

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"* In females the examination being made beneath the bed clothes, is conducted without the slightest exposure."

"† The last curve of the rectum is so trifling, that it matters not whether we introduce the

of the bowel, provided it gives no pain, for the introduction will commonly produce an uneasy sensation; we continue to propel the bougie in the same direction, about three or three and a half inches higher, or through the second portion of the rectum; the point of the instrument will now bear directly upon the hollow of the sacrum, and the but end towards the left side of the body. With a view, therefore, of avoiding the sacrum, and of accommodating the instrument to the great curve of the rectum, we change its position, by describing the segment of a circle from left to right, with the but end, turning it upwards, at the same time continuing to propel the instrument. Having described this segment, we shall have carried the bougie full four inches farther, or to what may be considered the extent of the rectum. But it is yet to be introduced into the sigmoid flexure; we therefore triflingly depress the but of the instrument, at the same time propelling it upwards, till the whole is fairly within the sphincter—this accomplished, we may be satisfied."

The patient generally complains of pain, both in the rectum and over the surface of the abdomen, when the instrument has passed about five or six inches up. If obstruction be encountered, trifling pressure is to be maintained, for a minute or two, and then, if the pain increase, and the instrument remain stationary, it is to be withdrawn—a smaller size introduced—and so on, from larger to smaller, till we ascertain the bougie that passes with trifling pain or difficulty into the sigmoid flexure. The instrument should remain in the bowel ten or fifteen minutes, provided it produces no considerable irritation; at the expiration of which time it is to be removed, and allowed to harden in the shape which it had assumed in the intestine. The first introductions generally produce some irritation, and a nisus to relieve the bowels; but the rectum gets accustomed to the bougie in a short time. The operation should be repeated at intervals of three, four, or five days, gradually increasing the size of the bougie, and lengthening the period of its remaining in the bowel.

In the foregoing directions, it will be seen that Mr. Salmon differs from most preceding writers, as to the frequency of repeating the operation. Mr. Bell, after stating the constitutional treatment, directs a daily introduction of the bougie. Mr. Copeland gives similar instructions, but recommends the bougie to be left in for a longer period. Mr. White says the instrument should not remain longer in than half an hour at first—but, after some introductions, he lets it stay in the rectum eight or ten hours at a time. In general he uses the bougie daily. Against this diurnal introduction, the following objections are urged.

"The action resulting from the introduction of the bougie is twofold—dilatation and absorption. Now it must be obvious, that to produce these effects, it is necessary that a certain degree of pressure be maintained upon the strictured portion of the gut. It is by dilatation that the simple spasmodic stricture is removed, and by dilatation and absorption combined, that the permanent obstruction will be materially alleviated, if not totally cured. Our object should certainly be to dilate the passage as speedily as possible; nevertheless it should be borne in mind, that the introduction of the instrument causes a specific action or irritation, by which we overcome the unhealthy function of the part; this action, or irritation, should be allowed totally to subside before we again introduce the bougie. If, however, we daily pass bougies, suffering them to remain in the bowel for eight and ten hours at a time, I would ask, what time do we allow for the subsidence of the irritation we have created? nay, do we not encounter it at every use of the instrument, and thus rather promote than lessen the disease?"

In the early period of his practice, Mr. S. followed the directions of the writers above mentioned—experience induced him to prefer the plan which we have noticed.

The structure of the bougie is considered to be a matter of great importacce. He thinks Mr. White's bougie is not sufficiently firm. It yields too readily, and consequently does not make pressure enough on the strictured parts.

"The instrument I have been accustomed to use, is composed of fine linen cloth, very heavily coated with wax, and a certain portion of diachylon plaster, mixed with a small quantity of lampblack. From immersion in very hot water, some minutes previously to being used, it is rendered soft and pliable to any extent, nevertheless retaining one regular and smooth surface. When it is introduced into the bowel, instead of becoming softer, it hardens to a degree sufficient to afford considerable resistance to the action of the stricture."

As to gum-elastic bougies, when the stricture is remote from the orifice, it is next to impossible to introduce them. Metallic ones are still worse.

The introduction of the bougie is followed by cramps in the thighs and legs—numbness—shiverings—sickness, &c. not very unlike those phenomena which follow the introduction of a bougie into the urethra. These disappear after a few operations with the instrument.

"Of all the annoyances attendant upon the introduction of the instrument, none is more troublesome to the patient and the surgeon than the powerful action and the irritation of the sphincter muscle: which may be considerably lessened by taking care to pass the bougie completely through both the external and internal sphincters, first affixing a tape through its loop, a precaution which should never be neglected; for the bowels will sometimes draw up the bougie, so as to take it completely out

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convex or concave part of the instrument towa.ds the sacrum, but by passing it with the convexity backwards, we avoid the necessity of altering the position of the bougie in passing it through the second curve of the bowel."

of the reach of the finger; this happened in case the seventh, hereinafter narrated. The patient, exceedingly alarmed, sent for me; but, prior to my arrival, he had voided the bougie, rolled up like a ball. It caused the most distressing pain in its passage through the sphincter, but no subsequent serious inconvenience resulted from the accident."

It is curious that patients under the use of the bougie are more susceptible of cold than at other times. In some cases, the bowels will soon become regular after the use of the bougie—in others, no material benefit will result for many weeks—in some, the bowels never become regular, however much the health may be improved.

In a very short chapter on carcinomatous disease of the rectum, Mr. S. advises, of course, that we should avoid producing irritation by any attempt at introducing bougies. All we can do, in these unhappy cases, is to sooth pain, and keep the bowels gently open.

A considerable number of valuable cases are introduced into the work by Mr. Salmon; but we shall only have room to notice one, which is very curious and interesting. We must abridge it very much.

Case.—Mr. ———, aged 41, complained, on the 31st of October, 1821, of pains in various parts of the body, especially the loins, knees, and ankles. He had an ulcerated throat, and his digestion was greatly deranged. The least quantity of food produced pain in his stomach. He had undergone courses of mercury, under the idea that he had syphilis, and he was now taking four grains of calomel daily. The mercury was discontinued—proper medicines were prescribed—and, on the 24th Dec. we find him reporting himself quite well, and setting out on a journey. On the 13th May, 1822, Mr. Salmon saw him, when he informed Mr. S. that, till within a fortnight, he had been in perfect health. He now laboured under constipation and irregularity of the bowels—hæmorrhage occasionally from the rectum—pain in the region of the stomach—scanty lateritious urine—night-sweats—cough. The pulse was tranquil. He had been a free liver, and even now indulged in wine. He got a little better, and went to Brighton, on returning from which place, in July, 1822, he presented a very altered appearance. He was emaciated in the face and limbs, while the abdomen was enlarged and tender, but without distinct fluctuation. He suffered much when his bowels were moved. It was apprehended that his liver was diseased, and mercury, squills, &c. were prescribed. On the 27th July, fluctuation was evident, and he was generally anasarcous. He was seized with violent pain in the abdomen, severe purging, and profuse hæmorrhage from the bowels. All things went on badly, and, on the 2d September, it was determined to tap the abdomen. On examination, a hard protuberance was felt under the margin of the ribs, on the left side. It was considered by Mr. S. and a physician to be an enlarged liver. On the 10th September he was supposed to be dying. He was insensible—pulse intermitting. Brandy recruited him, and, on the 11th, he was much better, having had a diarrhœa, accompanied with much hæmorrhage, and immense *prolapsus ani*. On the 1st October, Mr. S. examined the rectum, and a firm stricture was discovered a few inches up. Some oil and water gruel were injected, when a large quantity of horribly offensive fæces came away. The next day a still larger collection was discharged, the fæces resembling sheep's dung. In short, there had been a complete Augean stable here, in the form of an immensely distended colon. On the 22d Oct. we find the patient greatly improved, by the use of injections and bougies. By the 15th November, he was able to go out, and take exercise—his belly was reduced—his bowels acted regularly, but the motions were still followed by blood. On the 13th December, we find him residing in a tavern in London, indulging in every kind of excess. The swelling of the legs had returned, and the distention of the colon was evident—the bowels were very irregular and the evacuation trifling. We must pass over a great variety of vicissitudes which this miserable and imprudent patient experienced, between December, 1822, and June, 1823, when he suddenly expired, while on the close-stool. The following examination will elucidate this strange eventful history.

"Upon opening the abdomen, I discovered one of the most extraordinary specimens of disease I have ever witnessed; no vestige of the stomach, liver, or small intestines could be seen, but one immense tumour, having an irregular surface, in some points perfectly hard, in others of a softer consistence. Upon examination, this proved to be the colon, distended with hardened fæces; so immensely large was it, that the transverse arch of the bowel extended within a trifling distance of the *pubis*, and the ascending and descending portions nearly coalesced; from these several points coagulated lymph had been thrown out, which had become organized, connecting the different portions of the gut, which was, as it were, glued in one mass: at the superior part, the colon firmly adhered to the great arch of the stomach, thrusting this organ, together with the liver, under the ribs; it had also contracted firm adhesions to the liver and diaphragm; at the sigmoid flexure it was united in the same manner to the superior aperture of the *pelvis*, and its lateral portions to the abdominal *parietes*. After a laborious dissection, I succeeded in detaching it from its different adhesions, and emptied it of the fæces with which it was distended; this I could only do by cutting it through, above the sigmoid flexure and *caput coli;* at the former of which points, the bowel was so completely obstructed, that even water would not pass through it. The intestine, notwithstanding its distention, was very considerably thickened through its whole extent. This appeared principally to have resulted from deposition between the muscular and mucous coats. In the rectum there were two obstructions, one about four inches from the

anus, and a second at about seven inches; and at the sigmoid flexure I could scarcely find any passage at all. The appearance of the obstruction at the sigmoid flexure was not the same as that in the rectum; the former being perfectly circular, whereas the latter was more like the elongation of the semilunar folds of the bowel, the general structure of which was materially thickened through the whole of the gut; the colon was likewise violently inflamed throughout the inner surface, there being here and there patches of ulceration; the small intestines were glued together in one mass, feeling like hard cords, and were diseased through their whole extent. The liver was harder than usual, yet could not be said to be diseased, though it was of a remarkably small size; the gall-bladder was distended with healthy bile, and the stomach contained a considerable quantity of the same fluid. The spleen, pancreas, kidneys, and bladder, were perfectly sound and healthy, as were the lungs and heart, nor was there any unusual quantity of fluid in the pericardium; the cavity of the abdomen contained about three quarts."

The above very curious and interesting case shows how great a mass of feculent matter will lodge in the bowels, while we are daily administering purgative medicines! It also shows that a distention of the colon may be mistaken for enlargement of the liver, or other organ in the abdomen. From this distention arose the difficulty of breathing, the irritation of the bladder, and the numerous indescribable symptoms under which this wretched patient so long laboured.

We must now close our analysis of Mr. Salmon's little work, which is indicative of sound judgment, liberality of sentiment, and a fair portion of practical observation.

From the Lancet.

TETANUS OCCURRING FROM THE APPLICATION OF A BLISTER, *successfully treated by Opium and Electricity.*

By J. Taylor, Esq.

A widow lady, 30 years of age, the mother of one child, had been subject for three years to repeated attacks of uterine pains, requested my advice in March 1827, for a pain in the left side, about the region of the heart. A blister was applied, aperients prescribed, and in the course of four or five days no traces of pain remained; the sore produced by the blister had completely healed, but the integuments remained more than usually tender. On the following Sunday, six days after the application of the blister, she ventured, contrary to my wishes, to walk about a mile to church at a quick and hurried pace, which greatly fatigued her, and on attempting to sing, she felt, to use her own words, "her mouth suddenly close with a violent spasm." Alarmed at such an unexpected attack, she immediately returned home; and when seen by me about an hour afterwards, the symptoms were as follow:—Mouth firmly closed; great rigidity in the muscles of the jaws; slight tension of the abdomen; countenance not distorted; slight headach, nausea, thirst; and she complained of debility and stiffness in the neck. The irritation caused by the blister had apparently subsided; pulse 88, soft. In this state, perhaps it was difficult satisfactorily to determine, whether the symptoms were those of Hysteria, or proceeded from the application of the blister; but, reasoning from analogy, I adopted the first opinion, in consequence of having previously attended her sister in several attacks of hysteria, with all the above mentioned symptoms, although the locked jaw never continued longer than a quarter of an hour. Acting on this opinion, an aperient was prescribed, and after its operation, antispasmodics: (these she was enabled to swallow, from having had two teeth extracted a few months before;) which were continued for 24 honrs without the slightest mitigation, or even any perceptible effect being produced. The teeth were still firmly in contact, the muscles of the jaw rigid and painful, with great increase of abdominal tension; headach and dimness of sight, watchfulness, and constipation; pulse 89 to 100, and small.

It was now evident, that these symptoms were no longer to be considered hysterical, and as there had been no contusion or wound of the extremities, I could not but regard the irritation of the blister, or some other exciting cause, as the source of those symptoms which, although but trifling at the commencement, were new clearly those of tetanus; consequently 16 ounces of blood were taken from the arm, 10 leeches applied to the temples, æther to the shaven head; an injection of ℥j. ol. terebinth; ℥ss. sap. moll., and a pint of warm water; and a draught of ℥j. tr. opii every four hours, which was gradually increased to ℥ij., and ultimately to ℥iij, together with teberinth. injection, and the ext. belladon. to the sides of the face; still the symptoms increased with alarming rapidity; and as the tr. opii had failed to produce any relief, it was discontinued, and the crude opium introduced per anum, commencing with ℈j. and gradually increasing it to ℥j. every four hours, with the terebinth. injection, and cold ablution to the head and neck. Notwithstanding this active treatment, the symptoms continued to increase, with violent and frequent convulsions, the body being bent like a bow, and resting only on the heels and occiput; alternately, delirium and rational tranquillity. At this critical period I determined to try the effect of electricity; accordingly an apparatus was procured and placed in the room, from which a small Leyden jar was filled with the fluid, and the patient holding it in her hands, applied the knob to her chin, lips, cheeks, and forehead, thus receiving the electric fluid in the form of sparks: the application of the second and succeeding jars, was productive of a sensation of heat along the gums, which was soon fol-

lowed by complete relaxation of the muscles of the face, and also of the abdomen, accompanied with cold perspiration, faintness, and other symptoms of exhaustion. A glass of wine was given, a suppository of ʒj. crude opium was introduced, and sleep was procured for the first time since the attack, (eight days.) In the morning, however, these beneficial effects were obscured by a recurrence of spasm more violent than before, which not only resisted the effect of electricity, but even threatened to preclude its further application by a speedy and violent dissolution; however, the paroxysms becoming less violent, and the intervals longer, its application was continued, but without effect, the jaws still remaining firmly closed. But as its effects had been so decidedly beneficial in the first instance, particulary while the system was under the influence of opium, I was still determined to persevere; accordingly ʒj. of crude opium was again introduced per anum, and after an interval of two hours, electricity was re-applied, and with the same happy result as at first. The next and succeeding days served only to convince me, that although the conjoined effects of these two remedies were sufficiently adapted to overcome this formidable disease, the separate application of either was totally useless. This plan was therefore pursued daily for a week afterwards, and the patient ultimately recovered.

It is, perhaps, worthy of remark, that during the use of electricity, the catamenia, which had ceased for three years previously, again returned, but soon afterwards disappeared.

From the Edinburgh Medical and Surgical Journal.

CASE OF TUBERCULAR TUMOUR OF THE BRAIN TERMINATING IN HYDROCEPHALOUS EFFUSION.

By Robert Evans, M.D. M.R.C. Surgeons, London.

May 22, 1826. J. N. aged 11 years, was a young gentleman of great acquirements and classical knowledge for his age, the son of a learned clergyman. He was reported to have had a discharge of blood from the bowels, with a protrusion of the rectum, till he was eight years old; and for the last six years this discharge took place occasionally while at stool. This ceased latterly for several months; and since that period he complained of a severe pain of the head, at times more acute, with slight giddiness, muscular debility and languor, listlessness, and disinclination to make his usual exertion. The bowels were costive, with deficient secretion of bile. The head was naturally very large.

He was ordered alterative doses of blue pill, with aperient medicine; the head shaved, and an evaporating lotion applied; leeches to the anus, and if not relieved by them, to the temples also, and to abstain from animal food.

By this treatment for some time he was much benefited, and took horse exercise. This was a truce of short duration only; for in a little time (18th June, 1826) he complained of more decided symptoms of cerebral disease, as severe headach, great throbbing of the cerebral and carotid arteries, giddiness, double vision, irritability of stomach, and at times full vomiting; stupor, lassitude, and considerable dilatation of the pupils; and a sense of heat in the head, though without much change of colour in the face. The appetite was bad; pulse 60, and small; no thirst; no heat of skin, though restless; urine a little cloudy; bowels costive, and feet cold. He expresses the feeling in his head to be a throbbing, bursting sensation, forcing open the scull. A brother of this patient died some years ago with similar symptoms, and at the same age; but no dissection took place.

18th June, 1826.—For the above symptoms the head was shaved and blistered; and, though the pulse did not indicate it, xviij ounces of blood were drawn from the arm; ten leeches were applied to the temples, and cold to the head. The nape of the neck was blistered, and the surface was to be kept discharging with savin serate. Brisk purgatives were exhibited, with submuriate of mercury every fourth hour till the mouth became affected, combined with squill and digitalis in fit doses, and low diet. The feet were immersed in warm water. After venesection the pulse rose twenty beats, with perfect relief to the head and stomach.

22d June.—Complains very much of the head; vision double; pulse 88; dejections semifluid, dark coloured, and glossy on the surface; head to be well and often rubbed with tartar emetic ointment; venesection to ʒxvj., when he fainted; calomel and James's powder each two grains twice daily; diuretics continued.

26th June.—Much better, and medicines continued.

28th June.—Is better; pulse 70, irregular; dejections yellow; head easier; vision was better, but to-day is again double. No effect from the diuretics.

3d July.—A sense of fulness in the head; double vision, and a mist before the eyes obscuring objects; immense flow of urine; mouth very little affected; pulse 80. Twelve grains of strong mercurial ointment were ordered to be rubbed into the arm-pits night and morning; calomel and James's powder to be continued; weak chicken-broth and bread, which agree with his stomach.

10th July.—Was better, but to-day is very ill, nearly insensible. The head appears much enlarged, and the sutures feel as if separated. The mercurial fœtor is great, and the gums are red, but not sore; the pupils greatly dilated; he voided his urine once insensibly; requires aperient medicine; pulse 60.

14th July.—The two days previous he made still a larger quantity of urine, is more sensible, and felt no pain since the 10th. The head seems smaller, and the sutures are not felt so sensibly separated. Sleeps quietly and sound;

has more appetite and desire for drink; complains of cramp in legs and hands, with numbness and sleepiness, as he calls it, particularly in the right, but which are sometimes relieved by friction. He is almost blind, pupils dilated, and iris like a narrow ring. The mercurial ointment, calomel, and James's powder continued; to have beef infusion, chicken-broth, albumen of egg beat up with milk and water, and ripe fruit.

20th July.—Is free from pain; makes much water; no return of spasm; sleeps well at night; mouth not much affected. Continue medicines. A seton inserted in neck.

28th July.—Continues free from pain; is much affected by the mercury; no alteration in sight. As the action of the heart is much affected, the digitalis is omitted. Is cheerful, and joins in conversation; takes nourishment. Is ordered a mild bitter as a tonic to stomach; frictions with stimulating liniment to spine, legs, and thighs; bowels regulated by colocynth pills. The reported protrusion of rectum is now found to be a highly vascular fleshy tumour, with a long flat neck, which was removed by ligature.

This degree of convalescence continued to the 7th August, when he experienced a renewal of all his former sufferings; pain in the temples and forehead, chiefly in the evening; giddiness, and an almost constant involuntary rolling of the eyes; pulse 108 to 110. Mercury was again used, and antimonial ointment to the head; diuretics, &c. as before.

In the present attack the pain was so violent as to induce severe and general convulsion, and apparent apoplexy, ending in profound sleep, and returning with short intervals of ease; also most excruciating pain in the loins, groins, and front of thighs, with vomiting of acid matters. His distress was so great that he prayed to be relieved from his bodily sufferings. He is emaciated to a skeleton; blind, and unable to make the slightest exertion.

From this state he was again relieved, and continued more sensible, with good appetite, regular bowels, and sound sleep, and without pain or convulsion; but the eyes were constantly rolling and turned downwards, and a feeling as if his body was constantly sliding down from his chair.

29th September.—No permanent benefit having been obtained from the treatment pursued, and various other remedies not mentioned, and pain returning at intervals, frequent convulsions, and tremors of the legs, with inability to raise or move them, though possessing sensation, he was merely attended to with nourishing diet, medicine, and enemata to regulate the bowels. Though at intervals free from pain, at others it was most excruciating, with frequent convulsions. He lingered till 26th June, 1827, when death released him from his sufferings. He was sensible to questions, and his mental faculties were clear almost to the last.

He was scarce able to raise his hands to his head; and the fæces and urine were passed unconsciously for several weeks previous to death. When near dissolution, and scarce able to speak from weakness, and when addressed by his parent on the subject of eternity, his intellectual functions were shown to be unclouded to the last moment by the clearness of his replies. A medical student, a relation, was the greater part of his illness constantly with him.

Dissection twenty-four hours after death.—A clergyman and the medical gentleman mentioned were present. The body was so emaciated as to resemble a skeleton covered with skin.

Head.—On the upper and anterior part of the right frontal bone was a tumour about the size of a hazel-nut, soft and compressible, but not so large as during life. When the skull-cap was removed, we found in it seven perforations two and half lines wide, and several smaller ones, some on the upper part of the frontal bones near the coronal suture, and in the line of the saggital on the parietal bones. These perforations were not from caries, but absorption from internal pressure, and were merely closed by a fine delicate membrane, not stronger than the arachnoid seen in the base of the skull, and covered by the common integuments. The whole internal surface of the skull, particularly in the direction of the sinuses, was rough, and studded with numerous spiculæ, not from osseous deposition, but remaining from bony absorption; and generally the substance of the skull very thin and nearly transparent, except a patch at the upper portion of the parietal bones, which was morbidly thick and dark-coloured. The dura mater was perforated by the tumours, which corresponded to the openings in the skull, and its vessels tinged with dark blood, though the sinuses were empty when slit open; and it adhered firmly for a small space to the upper portion of the right anterior lobe of the brain, and in other respects healthy. The falx was healthy, but adhering also firmly to that part of brain similar to dura mater. The pia mater loaded with blood, and easily removed from among the convolutions; and its removal gave vent to a small quantity of limpid fluid.

The convolutions and intergyral spaces seemed in a sound state, and in usual proportion all over the surface, except on the right anterior lobe, which was a mass of apparently disorganized substance, with a surface unequally projecting, like a mass of tubercles agglutinated together, and hard to the feel. On exposing what is termed the *centrum ovale*, the interior of the brain resembled a bag of fluid buoying up the *corpus callosum*, and distending the surrounding substance. The left lateral ventricle contained a quantity of fluid clear as rock water. The *plexus choroides* was small, and of a pale colour.

The right ventricle was enormously distended with a brownish-coloured fluid, that coagulated on being exposed to the air. The floor and side of this ventricle next the *corpus callosum* were lined by a layer of apparently organized lymph, closely adhering to the subjacent surface, about a line thick, highly vascu-

lar, and smooth surface, and when cut into resembled the cortical substance of the brain. The *plexus choroides* was larger. The outer wall of the right ventricle, and indeed the whole of the anterior lobe, was a mass of tubercles, of various hues, and from the size of a hazel-nut to a hen's egg, of a light dove-gray and yellow colour, highly vascular, except the centre of the general mass, which was friable, and of a whitish yellow colour, like a custard. Some of the exterior part cut like semi-cartilage. Some of these tubercles lying in the ventricle were easily separated from the general mass, and were friable in the centre; and in one there was a small elliptical cavity lined with a fine glossy membrane. There was not a vestige of medullary substance in the right anterior lobe nor pia mater. There were some small tubercles on the outer surface of the left anterior lobe, but not dipping beneath the cortical substance, corresponding to the absorbed portions of the skull, of a pulpy consistence and whitish yellow colour. These perforated the dura mater. It was thought there could not be less than sixteen ounces of fluid in the head. It could not be collected.

The cerebellum was healthy. Limpid fluid was effused between the dura mater and upper portion of *medulla spinalis*, but its quantity could not be ascertained.

Abdomen.—Intestines distended with air; hard fæces in rectum and colon; stomach empty and small; veins of omentum filled with dark blood; gall-bladder distended with dark-green bile; liver and other viscera healthy.

Thorax.—When opened, the lungs were found not nearly to fill the chest, but crepitous all over their substance. No fluid was contained in the pleura or pericardium, which was in other respects sound. Heart generally large; right auricle very large; and both auricle and ventricle contained black fluid blood; the walls of the latter soft, flabby, and two lines in thickness; its capacity large, and was judged four times larger than the left; valves very thin. Left auricle before cut into was about the size of a goose egg, and hard; its capacity very small, and its walls of the base six lines in thickness. The margin of the valves at the aortic aperture, for a line in breadth, was very closely studded with morbid growths, semi-cartilaginous, from the smallest point to a pin's head. *Carneæ columnæ* very large, and nearly filling the cavity of the ventricle; left auricle very small and shriveled; coronary veins filled with blood; large vessels healthy. There was a growth of a solid bone, ending in a point, near three inches in length, growing from the internal condyle of the *os femoris*, point standing upwards.

From the Nouvelle Bibliotheque Medicale.

MEMOIRE SUR UN NOUVEAU MOYEN DE HATER L'EXPULSION DU PLACENTA. Par M. le Docteur Duparcque.

Some years ago, Professor Mojon of Genoa, proposed the injection of cold water into the vessels of the placenta, in uterine hemorrhage supervening immediately after delivery: the same physician has recently suggested a similar employment of a solution of the chloruret of lime, to remove the fetor arising from the putrefaction of the placenta, in cases of retention of that organ. I am not aware that this plan has hitherto received the sanction of experience.*

The following facts are therefore not without interest in this point of view, while at the same time they show the applicability of the proposed method, to other cases of parturition.

1st. Madame L——, æt. 20, of small stature and lymphatic temperament, was attacked with the pains of parturition on the evening of the 26th March; they were principally confined to the cervix uteri, and, notwithstanding their sharpness and frequency, were long in effecting its dilatation, so that the expulsion of the child did not take place till the evening of the following day, and was then rather the result of the voluntary efforts of the patient, than of uterine contraction. Half an hour afterwards, she complained of a sense of faintness, became pale, pulse small, and the uterus formed a soft tumour extending to the umbilicus,—symptoms evincing inertness of the organ, and internal hemorrhage. The immediate extraction of the placenta was indicated, but the os uteri had contracted, and the umbilical chord appearing too weak to support the necessary force, it was deemed a favourable case for the employment of the plan recommended by M. Mojon.

The chord was divided above the ligature, which had been previously applied, and the tube of a syringe, containing five ounces of water of the temperature of 55°, being closely adapted to one of the veins; about two-thirds were slowly injected, when the patient complaining of pain in the region of the kidneys, the operation was suspended. The pain however quickly ceased, and the remainder of the water being thrown up, immediately induced a recurrence of the pain, and uterine contractions, which continued uninterruptedly till the expulsion of the placenta and a large mass of coagulated blood,—the whole not occupying more than from five to six seconds.

2d. Another fact which has lately fallen under my observation, tends to confirm the efficacy of this plan in accelerating labour. A woman, at the termination of her fourth pregnancy, was attacked by an abundant hemorrhage, occasioned by the insertion of the placenta over the os uteri. The existence of the patient being endangered. I immediately proceeded to the delivery, which was effected by turning the first child; another was expelled by the unassisted efforts of the uterus, which, exhausted by the distention it had

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* The Journal of Foreign Medicine, vol. I. p. 90, contains a case in which the above plan was successfully adopted by Dr. Taroni of Milan.

undergone, and participating in the general debility, fell into a state of inertness, while the hemorrhage continued to the imminent danger of the patient. Six ounces of cold water were injected into the umbilical chord of the second child, with the effect of exciting uterine contractions, which, together with gentle traction of the chord, produced the expulsion of the placenta; the manual assistance was rendered necessary from the bulk of the united placentæ, one of which was still farther increased in size by the injection.

Remarks.—The action of cold water injected into the vessels of the placenta, and thus brought into more or less immediate contact with the uterus, has a strong analogy to that of the secale cornutum. In both instances, pain, energetic contractions of the uterus, and involuntary expulsive efforts rapidly supervene, and continue without intermission till the delivery of the child in the one case, and the placenta and its dependencies in the other. These effects are more quickly produced by the injection, than by the ergot; several minutes, and occasionally, a quarter of an hour, intervening after the administration of the latter, while they instantaneously follow the entrance of the water into the placental vessels.

The injection of cold water may therefore be considered as an excellent means of inducing the detachment of the placenta, in cases of retention of this viscus, and particularly when any circumstance occurs, rendering its immediate expulsion necessary. It is preferable to tractions exerted upon the chord, which from a variety of causes are often ineffectual, and also to the introduction of the hand into the cavity of the uterus, an operation which is always painful, and not altogether without danger.

The absolute safety of the injection is not the least argument in its favour; and it should even be had recourse to immediately after the birth of the child, when from any circumstance, we may be led to apprehend inertness of the uterus, and the frightful symptoms which are its ordinary consequences; in women, for example, whose previous labours have been protracted and difficult, complicated with hemorrhage, &c.

The effects arising from the injection of cold water, being equally prompt and efficacious, may it not be productive of some advantage in certain cases of preternatural labour? such, for instance, as the following:—

1st. *Presentation of the Umbilical Chord.*—In this case, the life of the child can be preserved only by accelerating delivery, and the chance of success is proportionate to the rapidity with which this is effected; but how much delay and difficulty, often insurmountable, does it not present! The application of the forceps, or the turning of the child, cannot always be effected with the requisite celerity, and is moreover not unattended with danger both to the mother and child. Let us suppose, and the case is not of unfrequent occurrence, that the waters of the amnios have drawn along, in their escape, the umbilical chord, and that immediately afterwards, the uterus has fallen into a state of inertness, the os tincæ being soft and dilated, and the presentation favourable; would it not be better to terminate the labour in a few seconds, by the injection of cold water into the vessels of the placenta, than to lose time in attempting to return the chord, waiting the effect of uterine contractions, applying the forceps, or performing the operation of turning?

The momentary suspension of the circulation between the child and placenta, by the ligature and division of the chord, will be evidently less injurious to the child, than the more prolonged interruption necessarily occasioned by the adoption of either of the other methods. I have always observed, that in presentations of the chord, the child is born almost exanguious, and have therefore long since adopted the practice of applying a ligature before proceeding to the artificial termination of the labour. It is true, that by this means, a state of asphyxia is induced, but from this state the child can generally be resuscitated, which is almost impossible, when this precaution having been neglected, the child is born exanguious.* The ligature of the chord, therefore, cannot be adduced as an objection to the plan proposed. It should subsequently be divided on the placental side, and two or three ounces of cold water injected, and repeated at an interval of a few minutes, till the effect be produced.

The greatest difficulty will be, in deciding upon the portion of the chord which belongs to the placenta. This, however, may be determined by the pulsation of the artery, and the direction of the current of blood when the chord is divided.

2d. *Natural and artificial Presentation of the Inferior Extremities.*—It frequently happens in these cases, that after the delivery of the trunk, the head remains engaged in the superior strait, by reason of feebleness or absence of uterine contraction. It is necessary to have witnessed such a case, in order to appreciate correctly the difficulties attending it; the most skilful manœuvres are very often ineffectual, while it happens, that after a variety of fatiguing and useless efforts on the part of the practitioner, a strong contraction of the uterus, spontaneously effects its expulsion; not, however, until after the death of the child. Is not this a case, in which the in-

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* The umbilical veins being very flaccid, a slight degree of compression is sufficient to arrest the circulation through them; the arteries, on the other hand, are more resisting, and consequently do not yield so readily to any obstacle. It will, therefore, occasionally happen, in presentations of the chord, that the circulation from the fœtus to the placenta will continue, while that in the reverse direction will be interrupted, and the consequence is, that the fœtus will be more or less completely drained of blood.

jection of the placenta might be advantageously resorted to?

Having witnessed the extraordinary effect of the injection of cold water into the placental vessels, I do not doubt that it will be found as effectual in the cases just indicated, as in simple retention of the placenta, and hope therefore that physicians may be induced to submit it to the test of experience.

From the London Medical Repository and Review.

CASE OF UTERINE HEMORRHAGE, *in which Internal Compression of the Abdominal Aorta, and of the great Arterial Trunks, was adopted with Success.*

TO THE EDITORS OF THE LONDON MEDICAL REPOSITORY.

Gentlemen,

In the September number of your Journal, 1825, you were so obliging as to insert a case of presentation of the placenta, in which internal compression of the abdominal aorta was resorted to, and although unsuccessful, convinced me it was practicable. I have several times felt through the parietes of the uterus the aortic pulsation, and have compressed it firmly against the left side of the spinal column; and in the above case the intermission and great slowness of pulse were distinctly perceptible. In executing this compression, I experienced at first some difficulty, in consequence of introducing my elbow into the vagina, which prevented my revolving my arm, and, in that way, turning its palmar aspect towards the sacrum, which it is essential to do. For in this manner, a more equable and firm pressure can be given for a longer period than where the situation is constrained. I would suggest also (but it is without experience as to the fact) the use of ol. terebinthinæ, which, being smeared over the hand, would evaporate into the uterine cavity, and possibly might assist in promoting contraction of its vessels, as it is known to do in other hemorrhages. Since the period of my first case, in which this treatment was employed, I have met with one which terminated favourably. I introduce it to show the whole plan in a connected manner, for it is very satisfactory to know that no means have been left undone which could, in any way, promote the principle in practice or secure a fortunate result.

Mrs. J——, a spare but healthy woman, was delivered of her fourth child in the absence of her medical attendant, by which she was much alarmed, and, in consequence, sent for me, about two hours after the birth of the child. The hemorrhage had been extremely profuse; the blood had passed through the bed and boarded floor into the lower room, and there appeared a full quart of coagulum in the bed itself. Her state was exceedingly alarming; the voice was lost; she spoke in whispers; the lips and gums were quite pale; no pulse distinguishable at the wrist; extremities cold; much restlessness. From these symptoms I immediately foresaw the utmost danger, and I apprised the family of my apprehensions. On examination, I found that hour-glass contraction had taken place, most completely indeed. The placenta was retained in the upper cavity of the uterus, and the intermediate space through which the funis passed, not larger than would admit the apex of the cone formed by the thumb and four fingers of the right hand. I gradually dilated this, by expanding the several fingers, and with some difficulty, extracted the placenta through the opening. The hemorrhage now became increased, with the most alarming degree of faintness; the respiration was carried on by long and slow inspirations; the external senses, as well as deglutition, were almost entirely abolished; a sort of convulsive rising of the larynx took place, and to every by-stander the patient appeared dying. I determined, therefore, without loss of time, to put in full force the following method, (fortunately there were rollers at hand:)—I bandaged up the arms and legs as tightly as possible, placing beneath a ball of worsted, cotton, or a pad directly upon the brachial and femoral arteries. Again introducing my hand into the uterus, which by this time had nearly recovered its proper figure, I made firm pressure upon the abdominal aorta, just above its bifurcation, with the points of my four fingers, adapting them to the convexity of the bone. At the same time, pressure was made by hand externally. I kept my fingers with great force upon the artery for about ten minutes. There was from the first a gradual improvement. Uterine pain now came on and forced the hand and a quantity of coagulum from the cavity. My own anxiety was now removed, and the woman answered my inquiries audibly. Nevertheless I did not think it prudent to release the limbs from the bandages for several hours, when they were felt very disagreeable, and the heat was restored. Cold and pressure was continued to the hypogastric region, and small doses of tinct. opii were given to abate pain; by which treatment she rapidly improved and became convalescent.

I am, Gentlemen,
Yours, &c.
WALTER JAMES.

From the London Medical Repository and Review.

I. THE ELEMENTS OF PHYSIOLGY. By FRED. BLUMENBACH, M.D. F.R.S., Professor of Medicine in the University of Gottingen. Translated from the Latin of the Fourth and last Edition, and supplied with copious Notes. By JOHN ELLIOTSON, M.D., Cantab; Fellow of the Royal College of Physicians, &c. &c. Longman and Co. London, 1828.

II. A DISQUISITION ON THE NATURE AND PROPERTIES OF LIVING ANIMALS. *With an Inquiry how far our Knowledge of Anatomy and Physiology is*

consistent with the belief of a Soul and a Future State; and on the Intellectual Difference between Man and Brutes. By GEORGE WARREN, Surgeon, pp. 144. Longman and Co. London, 1828.

Blumenbach's Elements of Physiology are so well known to the profession, as to render it quite unnecessary to give an analysis of them here; but the copious and interesting notes attached to this edition, call for some notice on our part. It is seldom that an opportunity is afforded us of reviewing works on physiology, we therefore hail the present with some degree of pleasure, especially when our remarks have to apply to the production of two such learned and scientific characters as the author and translator of the present volume. However valuable practical experience may be in the treatment of diseases, and however important to the profession and to the public at large, that all the facts connected with particular maladies should be faithfully recorded; still, unless this experience be associated with a knowledge of physiological principles, and unless the facts can be accounted for in a manner compatible with the recognised functions of the different organs, the healing art can never make much progress. Independently of the usefulness of the study of physiology as regards medicine, there is perhaps no science capable of affording the student more real pleasure, or of adapting his mind for forming more liberal ideas of human nature. Astronomy, adorned with all her sublimity, can elevate his views no higher than the stars of heaven; but physiology, although confined within a more limited boundary, leads him, nevertheless, to examine the attributes of a power associated with the nature of man, whose flights frequently extend beyond the range described by the eye of the astronomer. The properties of the human mind come as much within the range of physiology as those of the body; and he alone who understands the relative situations and the functions of the various organs constituting the animal machine, can expect to add any thing useful to the science of moral philosophy.

Every physiologist finds it necessary to take into consideration the properties of LIFE before he can proceed with his subject, but it is curious to notice the different views which authors appear to hold respecting the causes which give rise to vital phenomena. It is unnecessary to inquire at present into the different opinions which have been entertained by philosophers at different ages relative to the nature of life, or to the powers which have been more particularly attributed to it under the different appellations which it has received. It is sufficient to notice, for our present purpose, that all those who have treated of life, under whatever appellation, may be ranked in one or other of the three following classes: *first*, those who have considered life specially to consist in the function of each organ, and, generally, in the sum total of all the functions; *second*, those who have maintained that life consists in some subtle, mobile fluid, or other principle pervading the whole system, and directing the operation of every organ; *third*, life has been considered by another class as a mere *power*, either emanating immediately from the Deity, or presiding in some other inexplicable manner over the functions of the various seats. The definitions of life under these forms have been further variously modified and reduced into diverse orders. Many of those who confound life with the organic functions, do not attempt to explain in what manner, or by what power, these functions are carried on. They rest contented with attributing the operation to some secret powers, either connected with the chemical combinations of the materials which constitute the structure, or to some other hidden properties not worth inquiring into. "The essential nature of life," says Dr. Elliotson, "is an impenetrable mystery, and no more a subject for philosophical inquiry, than the essential nature of attraction or of heat." We may also say, that the *essential nature* of oxygen, is a mystery quite as impenetrable as that of life. The essential nature of light, electricity, carbonate of lime, and of all the most subtle, as well as the grossest forms of matter, is equally as mysterious; but do the *properties* of these substances, for all that, become less a subject for philosophical inquiry? If life consists of a subtle fluid pervading the structure, let us inquire what the properties of this fluid are; how it acts in the formation of the different tissues; by what kind of properties it promotes the growth and nutrition of these tissues; how its modifications differ in the different organs, so as to adapt each for a particular function; what is the nature of the changes which take place in it while under the influence of disease; whether it be liable to a change of form, like other modifications of matter; and, lastly, what are the properties which render it liable to decay, and to cease to exist as a vital agent? These inquiries do not relate to the *essential nature* of life; they relate to properties, which, if such a thing as life exist, are essentially connected with it; and these properties, although merely objects of inference, come as much within the range of philosophical inquiry, as those of oxygen, carbon, electricity, or any other form of existence. Again, if life be a mere nominal effect, depending upon causes connected with the chemical combinations of the gross materials of which the textures are composed, let us inquire what the peculiarity of these combinations are in the different tissues; in what way they are affected by disease; in what way they contribute to the growth, nutrition, and the preservation of identity of the different organs; what way their forces become weakened in old age, and, ultimately, destroyed in death? Whatever view we take of the nature of life, there are numerous inquiries suggested concerning its properties besides those which are applicable to its phenomena, manifested in the performance of the animal functions.

It is curious to notice the inconsistency of

the arguments of those who maintain that life has only a nominal existence. Dr. Elliotson says, that "the *organic functions* depend on *life*, in the proper acceptation of the word. The word life, should be regarded, like the word attraction, or repulsion, as merely an expression of a fact. In this point of view, it may be as easily defined as any other expression. By life, we *generally* mean the *power* of *organized* matter, to preserve its particles in such chemical relations, as to prevent other chemical relations from inducing disorganization; or even to increase or decrease by internal appropriation and separation; to produce peculiar matters for its own purposes, &c." So the organic functions depend on *life;* life depends upon a certain *power*, which power depends upon *organized matter*. We will ask, where is the organized matter to be found on which the life of an egg depends? There must be some power here, to draw together the organic particles, in order to form the organized matter. Upon what does this power depend? Does it not depend on life? If not, upon what else? for there is here no organized matter. Let us propose the same questions respecting the human ovum. What gives a certain quantity of fluid, secreted in the ovaria and testes, the peculiar property of developing a heart, a liver, a brain, muscles, intestines, &c.? There is here also no organized matter, but are these effects not dependent on life? Can any organic function be pointed out where vital properties are more clearly manifested than in the organic formation of the structure? yet this process, as in the ova of birds, as well as in the human ovum, is carried on independently of any *organized* matter, further than that, in the latter, this modification of matter conveys materials for some other power to act upon. It would be absurd to maintain that an egg, from which, by the mere application of a certain degree of caloric, a chick may be produced, does not possess life; and it is for those who attribute life to the inherent properties connected with the chemical combinations of the structure, to show how a substance, possessing nothing resembling organization, can preserve its life, and by what sort of process this structure is converted into organized matter, according to their view of vitality. We do not deny that life acts by means of properties analogous to those which govern the affinities of tangible matter; but that there is, in living substances, a principle *not depending on* the organized form of these substances, yet *connected with* the structure, when arranged, appears to us quite positive, so far as inference can render any thing positive; because the structure upon which life is said to depend, could never be originally formed without such a principle. By principle, we here mean a particular modification of matter, possessing properties peculiar to itself; like every other modification. We do not inquire into the "essential nature" of this modification more than into that of matter in a visible and tangible form, in our chemical researches; for such an inquiry would be useless, inasmuch as we know no more what the essential nature of matter is in one form than in another. Its properties constitute our only subject of examination, and we find these different in each modification or form. In one form, it presents all the characters of muscular fibre; in another, it exhibits those of cerebral substance; but neither of these will indicate any thing like vital properties, although to all appearances perfect in condition, without the addition of another modification, possessing properties different from any of those essentially connected with matter arranged in the form of these tissues.

It appears extraordinary at first view, that none of those who argue in favour of life being a part and parcel of the structure, or dependent on this structure, attempt to explain the manner in which the structure itself is produced; but when we consider that to account for its production would be impossible, unless it be admitted *that a thing can produce itself*, our wonder ceases that this part of the business of life is passed over unnoticed by these physiologists. Dr. Elliotson observes, that "by attributing life, the power of attraction, &c. to subtle and mobile fluids, we not only do not advance a single step, for we have still to explain what these fluids are, and how *they* obtain *their* powers, just as we had before in regard to common matter; but we make the additional mysteries of their being united with ordinary matter, and so united, that life appears a power possessed by *it*." Now the first remark which we shall make on this passage, is, that no analogy can be traced between *life* and *attraction*. Attraction is a property connected with matter universally, in every state or condition; whereas life is associated with it in very few conditions. Attraction is never lost when matter changes its form from one state to another, but bodies endued with life lose their vital properties frequently even before they change their form. With regard to "what these fluids are, and how *they* obtain *their* powers," the question is easily settled. Respecting what they are, it is enough to say, that they are modifications of matter; and they obtain their *powers* from their properties, like every other modification of it. As these properties are peculiar to these forms, their *powers* must, of course, be also peculiar. Whence does oxygen, carbon, and all other substances obtain their powers but from their properties? and the properties of each of these are as peculiar to it, as those of the fluids in question are to these fluids, if they may be called by that term. By ordinary matter is, we suppose, meant gross or tangible forms of matter. If this be the case, we make no mystery by supposing a more subtle form of it to become united with grosser forms. We find an analogy to this in the union of the electric fluid with different bodies. The phenomena which these bodies manifest in the electrified state is never attributed to any properties inherent in the bodies themselves, because they are known not to possess such properties in their natural state. In the same way, any

properties which the structure is found to possess when not in alliance with life, are inherent in it, and belong to it; but if, by the addition of life, it can do that which it could not before, the properties which enable it to do so are attributable to life, and not to the structure itself. As for life, by its union with ordinary matter appearing a power possessed by this matter, we have only to remark that electricity, in the same manner, when united to bodies, *appears* as if a property inherent in these bodies; but we are not to take this *appearance* as a sufficient test of their being so, because it can be demonstrated, in another way, that they are not. If it be asked what advantage we gain by admitting that life consists in a principle *sui generis*, we reply, that we gain the advantage of being able to account for the formation of the structure, for its growth, nutrition, and the reproduction of some parts of it; for the phenomena of disease, and for death, produced under various circumstances, when the structure appears to retain all its integrity. We shall not stop at present to show these advantages to be real, but some remarks upon this part of the subject may be referred to in the late numbers of this Journal.

We fully agree with the learned translator of this volume, in the following opinion:— "That fluids, as well as solids, are susceptible of life, I cannot doubt. There is no reason why they should not be so, although a person who has not thought upon the subject, may be as unable to conceive the circumstance, as a West Indian to conceive that water may, by cold, become solid. It is impossible to deny that the male or female, or both, or united, genital fluids are alive, because, from their union, or the one influenced by the other, a living being is produced, which partakes of the vital qualities of each parent." We say that we fully agree with Dr. Elliotson in the above opinion, but how he can reconcile this remark with that part wherein he says that life is nothing more than the power of organized matter to preserve its particles in chemical relations, &c., we cannot tell; for nothing like organization exists in the fluids; yet were there no vital properties evolved in union with the seminal fluid, where are they to come from to the embryo? There is no resemblance between the seminal fluid and muscular fibres, yet each possesses life, which they could hardly be supposed to do if life depended upon the chemical combination of the structural materials. There is as little resemblance between the texture of the brain and that of vegetables. In the chemical world we never find substances so dissimilar in their internal characters possess properties so analogous as those of living beings of every description. We are not going one link further than is necessary, in attributing life to some other principle than the organized structure, for as this structure cannot produce itself, something else must produce it; and this something, which must necessarily be different from the structure, we infer to be life. We, moreover, infer this to be a principle or modification of matter, possessing properties peculiar to itself, by means of which it is capable, probably by affinity, of arranging materials into the form of organized tissues, and of producing in unison with these tissues, all those phenomena observable in living beings.

According to this view of the properties of life we may account for all the phenomena manifested by it; the different tissues must be regarded as depending upon the union of vital and material properties. Every organ is made up of tissues possessing separately very different properties, but all these contribute to produce one effect. The phenomena of nature universally, so far as our knowledge extends, are carried on under the influence of opposing forces, and the functions of living objects appear to form no exception to this rule. If we take the function of secretion as an example, we find the necessity for a particular form of structure for the production of each fluid; for nervous influence; for blood; absorbent vessels, &c., the properties of each of which are very dissimilar from those of any of the others, yet, by their union, they tend to bring about one determinate end.

A particular phenomenon connected with the function of life, is *sympathy*. No satisfactory doctrine of sympathy has been as yet promulgated; for although this phenomenon has generally been traced through the medium of the nerves, yet it frequently subsists between parts not immediately connected by nervous communication. As an instance of this, we may notice titilation of the nose producing sneezing, by calling the diaphragm into action; the translation of gout from the toe to the stomach, or to the cerebral membranes, may be also noticed as an example. In fact, sympathy can neither be traced to nervous communication nor to continuity of surface in many cases; it must, therefore, be sought for in some other powers associated with living parts. Before we can point out these powers we must refer to what has been advanced above, and in former numbers of this journal, but in order to render these remarks understood, it may be here noticed that life is considered a heterogeneous principle, differing in modification in every tissue, having, consequently, different properties in each, and that upon this heterogeneity depends the different forms of structure of which the body is composed. It is obvious that tissues which are most nearly allied in structure, are endued with most analogous properties, and it is between such tissue that we most commonly observe the phenomena of sympathy take place. We may mention as examples, the metastasis of rheumatism from one joint to another; of gout; of affections of the mucous and serous membranes of distant seats sympathising with each other, and partaking of the same disease. This may be accounted for upon the principle that similar properties have similar affinities, and that they are, consequently, liable to be acted upon in the animal system by similar causes. Whether these causes derive their source from the outward world, or from ope-

rations going on internally, and changing, by a chain of causes and effects, those relations naturally subsisting between the different tissues, or between life and structure, and thereby giving origin to a new form of matter, capable of acting further, by a similar process, as a morbific cause to particular forms of tissue. Blumenbach notices this sympathy dependent on *analogy of structure and function*, but he does not attempt to explain the cause of it. Although, as he observes, "the primary and most extensive cause of sympathy must be referred to the *nerves*, and indeed chiefly to the *sensorial reaction*," still numerous instances present themselves where the phenomenon cannot be attributed to this cause; where the sympathy subsists between seats having no nervous connexion, except through the medium of the nervous centre, and where, often, there is no reason to infer this centre to exert any influence in producing it.

Dr. Copland, in his interesting notes to the last edition of Richerand's Physiology, divides sympathies into the *reflex* and *direct*, the former being chiefly referrible to the cerebral nerves and to the reaction of the sensorium, and the latter to the ganglial system of nerves. No classification will, perhaps, appear more correct than this, when we consider the difference of function which these two systems of nerves have to perform—that the former presides over the animal functions, and that the latter governs the operations of life in the organic department. From the intimate relation of the two sets of nerves, we frequently observe instances where the sympathy partakes partly of the character of the *reflex* and partly of the *direct*, and this is more particularly the case in that modification of sympathy depending on morbid action.

Bichât divides the properties of the living body into *sensibility* and *contractility*, and each of these is subdivided into *animal* and *organic*. Animal sensibility is accompanied, or rather followed, by mental perception; and animal contractility is the result of this perception, conveyed by the act of volition to the voluntary muscles. Organic sensibility is attended by no perception, and is followed by contraction quite independent of the will. When the definition of a term is given it can lead to no misunderstanding, otherwise that of *organic sensibility* does not appear to us quite expressive of the cause which gives rise to contraction in parts not under the influence of the will. The action of the heart, which is generally adduced as an instance of contraction, dependent on organic sensibility, caused by the stimulus of the blood, is, perhaps, as bad an example as could be produced, inasmuch as this organ will continue to act when not a drop of blood exists in it. The heart will be found to contract and dilate its cavities for some minutes after being totally removed from the body; its action cannot, therefore, be attributed to the *sensibility* of any impression made upon it. It, in fact, takes place from inherent properties connected with the life and structure of the organ itself, independently of the presence and impression of the blood on the lining of its cavities. How far all the other involuntary organs will contract from inherent properties is a question which we are not fully capable of answering, but that some parts of the intestinal tube, particularly the rectum, will do so, we have had opportunities of witnessing. Before a part can be said to act from sensibility, it is necessary that it should receive the impression of some cause which it is to be sensible of, for it cannot show itself *positively* sensible of *nothing*. We have, perhaps, no term that will strictly express the cause of contraction in these *self-acting* tissues, unless *irritability* will do so, but the idea here must not be associated with that of the properties of disease. Dr. Elliotson uses the term *excitability*, but this is liable to the same objections as sensibility with regard to the properties of the involuntary organs; for although these organs are *excitable*, still they will contract without being *excited* by any evident cause.

Organic functions are common to all living beings, and may be traced down from man to the most simple form of vegetable life. It may be asked, how far these functions are necessarily dependent on nervous influence? Dr. Copland, in the notes already referred to, attributes all the properties manifested by the organic life to the influence of the ganglial or great sympathetic system of nerves. This system, in the higher order of animals, combines with the cerebro-spinal, and is distributed to every part of the body; but he considers more particularly that nervous filaments proceed from the cardiac plexus, and follow the course of the arteries to their very extremities, forming a kind of sheath round these vessels, and imparting vital properties to them, as well as to the blood itself moving through them. This view will appear more correct when we consider that, as we descend in the scale of animated beings, the cerebral and cerebro-spinal nerves become gradually less perfect, and that in the lowest order these nerves are altogether wanting, whereas the ganglial are found to exist either in filaments, or in nervous globules, from the highest to the lowest degree of vital perfection. An objection might be raised here, because vegetables, although endowed with life, still possess no ganglial or other nerves. But such an objection will be found invalid when we consider that life must be viewed according to the class of beings with which it is allied. The properties of organic life may be allied with the ganglial nerves in beings supplied with these nerves; and although vegetables are devoid of nervous filaments, still analogous may be here more generally and homogeneously diffused throughout the textures of the body. In like manner, the procreative function is carried on in the higher orders of animals by means of certain organs, namely, the testes and ovaria; whereas, in lower grades, properties destined to produce a similar end, are generally distributed through the system, and the embryo grows from the surface of the parent, or the

parent itself, when divided, will multiply itself into almost any number of animals, each enjoying the same perfection and integrity of parts as the original. Again, in animals devoid of kidneys, the blood undergoes as perfect a depurration as in those that possess these organs, although the latter would soon cease to live if deprived of them. In fact, life appears so differently modified in different classes of living beings, as well as in the various tissues belonging to each class, as to confer properties belonging essentially to one organ, or one system of organs, in one class, on the textures generally, or on some particular tissues of which these textures are composed, in another class.

Admitting, however, the ganglial nerves to preside over the functions of organic life, still we cannot admit that they are the only, or the primary source of life. Neither the seminal fluid nor the secretion of the ovarian cells can possess any thing like nervous arrangement, yet these fluids, by properties resulting from their union, are capable of forming this arrangement, as well as that of the other textures. That they are not the only source of life is probable from the circumstance that parts which are scantily supplied by them are as much alive as parts which receive a more liberal quantity of their influence. The life of the brain cannot be denied, yet it is supplied with no ganglial nerves. The ganglial nerves appear to bear the same relation to the automatic organs as the cerebro-spinal bear to the voluntary organs. They form with them a cause capable of producing a certain effect, which consists in the organic movements; in the same manner as the other nerves contribute to bring about voluntary movement in their relation to muscular fibres. Each set is endowed with vital properties peculiar to itself, for the reason that any other properties, in relation to the same modification of structure, could no more produce that effect, than *four* and *two* could produce *seven*, or any other odd number. But, if the structure be different in relation to properties also different, it may tend to produce the very same effect, in the way as *five* and *three* will make eight, as well as *four* and *four*.

We shall now proceed to consider the animal functions more particularly, and these lead us to the moral department of our nature. To these we owe the sources of all our pains and pleasures, and all our social relations with the external world. By means of these functions the eye associates with colour, the ear with sound, the tongue with those properties of bodies which constitute taste, and the same with the other senses. This power of the senses, of forming relations with the external world, Bichât calls *animal sensibility*. The power of the brain, by which it takes cognizance of this relation, may be termed *perceptibility*. It is doubtful how far what Bichât calls animal sensibility does actually exist. We have no proof of its existence; we have no proof that light affects the optic nerve, or that sound affects the auditory nerve, independently of the brain. If either of these nerves be divided, the organ of sense which it supplies shows no longer any sensibility, though the natural stimulus be applied to it. Preternatural stimuli, such as the galvanic fluid, will, however, excite the cerebro-spinal nerves when their continuity with the brain is destroyed; but the nerves which are affected here are probably those of motion only. Query, will the galvanic fluid run from the extremities of the nerves *towards* the brain, as well as in a direction *from* the brain towards the extremities of the nerves? After death, when the muscles still manifest properties of contractility under the influence of the galvanic fluid, will the galvanic current flow in the contrary direction, and excite the *perceptible* properties of the brain? If it can do this, why does not the brain, like the muscles under such circumstances, perform its function, and display the phenomena of thought and volition, if it be the natural function of this organ to do so? Mr. Warren, the author of one of the works whose titles stand at the head of this article, states that—

"In parts endued with sensibility, the nerves are pervaded by electric fluid, and the circulating blood does excite to action this fluid at the extremities of the nerves, and thereby occasions an electric vibration throughout the whole course, up to that part of the brain or spinal marrow in which is seated the perceiving power. Such a state constitutes sensibility, for any further impression falling upon the part occasions a sufficient further motion, to impress upon the perceptibility of the animal a sensitive idea. It is to be understood that the nerves are conductors of vibrations, and not that they do themselves actually vibrate.

"In support, it is to be observed, that experiment proves the nerves to be conductors of electricity, and they are enveloped in a condensed membranous coat, which is a non-conductor of electricity; so far the natural arrangement appears conformable to the proposed truth. The next question which naturally arises is, whether an electric shock be capable of producing that variety of sensation which the animal is capable of experiencing. Here the proposition has the required support, since an electric shock passed through the skin, gives the sensation of an impression of contact through the eye of light, through the ear of sound, through the tongue of taste, and through the nostril of smell."

If we can find no stronger proof in support of the opinion that sensation is dependent on electricity, than that it gives a sensation of contact when the shock is passed through the skin, of light through the eye, &c. we may say, with the same degree of propriety, that a *piece of rotten wood* is a conductor of sensation, for it has all these properties in relation to our senses. If electricity be the conductor of sensation (we mean the *immediate* conductor, by its motion through the nerves,) how is it that the sensation conveyed through the different organs produces such a different impression on the brain? We are not aware

that there exists more than *one* modification of the electric fluid, and if this be the case, we can see no reason, according to this electric theory, why the olfactory nerve should not be as susceptible of colour as the optic, or why the optic should not convey sound to the brain as well as the auditory; or why sound should not excite the electricity of the nerve of taste as well as it does the nerve of the seventh pair. We can no more comprehend how the nerves can conduct vibrations without vibrating themselves; for something must vibrate before there can be a vibration, and if the nerves do not vibrate what is it that does?

We shall find the sum total of Mr. Warren's arguments in the following paragraph:—

"The opinions afforded by the foregoing reasoning are—that in every living animal there are certain faculties or attributes, to which, when considered abstractedly, may be appropriated the term 'anima' or 'soul'—that life consists of a relation between *such attributes* and the physical *laws* of the material world—that the body is the medium or instrument by which such relation is accomplished—that sensibility, muscular contractility, the organic movements, and animal combinations, depend upon the agency of electric fluid—*that the ulterior use of food-taking is the supply of electric fluid*—that the rapid circulation in animals is always in accordance with their degree of sensibility—that in the operation between the arterial and nervous systems, as well as muscular contraction and organic movements, heat is evolved—*and that the use of the lungs is to cool the body.*"

Mr. Warren does not attempt to account for the formation and growth of the structure. As the use of the food, according to his view, is the production of electricity merely, which is to act as the medium of relation between the soul and the material world, we suppose that the body derives its growth solely from the *air* which it inhales, for we know of no other materials than air or food which it can convert into that purpose. If electricity is life, as Mr. Warren and many others maintain, why, in the name of fortune, should we ever die, when we have the means of supplying ourselves to our heart's content with this principle? He who identifies electricity with life must be a very narrow-minded philosopher indeed. Because, forsooth, electricity can excite the muscles into action, and can substitute the properties of life in one or two more things, electricity must, therefore, be life; or, which is the same thing, life must be electricity. We may as well assert that spirits of wine, because it finds its level, is limpid, will moisten substances, &c., is absolutely nothing more nor less than water, for does water not possess the very same properties? Electricity is life, because it appears in the form of light to the eye; so does fire the same; electricity is life because it imparts the sense of sound to the ear, so will also the collison of two bits of iron; electricity is life, because it gives an impression of taste to the tongue; so will citric acid; it is life because the nose can swell it; so it can a rose; it produces a sense of contact with the skin—will not every other substance do the same thing? and, as we said before, are not all these properties found connected with rotten wood, or rotten fish? But it is said that electricity excites the muscles into action; will not a bit of salt, or the prick of a needle do the same thing? Will it keep the body alive, let it be ever so intense, after all the blood is drained from the vessels? Will it keep it alive after the spinal marrow is divided in the neck? because the electric fluid will run through just the same when the two ends are brought into contact. Will it re-establish the relations of the brain with the external world after natural life has become extinct? If electricity cannot do these things, and a great many more, we see no reason to identify it with life. But the most extraordinary property of this electric life is that it becomes extinct when another quantity of the same principle is added to it. The identity of lightning with electricity is universally acknowledged, yet lightning has, somehow, the property of destroying life without inflicting any mechanical violence on the structure. It is rather strange that it should do this if the two principles be the same. The volume or sum total of any other substance increases according to the quantity added to it, but it appears to be quite the contrary with life in this case. In fact, the absurdities of identifying life with electricity are almost without end, besides that the electric fluid could not, by any known property connected with it, build up the various tissues, and arrange them into their natural and relative situations. It is absurd to suppose that electricity, *or any other homogeneous principle*, could produce such a diversity of effects as are observable in a living body. What resemblance is there between the contraction of a muscle and the secretion of urine? Or between the contraction of the urinary bladder, and sensation, or volition? Electricity, in relation to inanimate bodies, never manifests such dissimilar properties, however dissimilar those of the bodies themselves may be.

The organs of the animal functions, like those of the organic functions, must possess, each, vital properties peculiar to itself—properties depending upon a certain modification of vital principle. The terms *organic* and *animal*, can only be considered in a relative sense; for the life of the brain, or of the cerebral nerves, is as much organic to these tissues, as those of the liver are to that organ, or those of the glanglial nerves are to those nerves. The brain is preserved, nourished, and the corpuscules of which it is made up, are renewed under the influence of its own peculiar modification of life, in the same way as the heart, kidney, or any other organ is by a different modification; in a similar way, also, its functions are performed by the united properties of this form of life, and those of the cerebral mass, whose particles have been previously arranged by the affinities of the former properties. The life of all the organs act by analogous, but not identical, properties. That

of the nerves of sense is adapted for sensation, and even here life is modified according to the kind of impression which the organ is intended to receive, for we know that the olfactory nerve has no relation to light, nor has the auditory any relation to odours.

Having offered these remarks, we shall now inquire into the office of life in relation to the brain, and we cannot explain our views more clearly than in Dr. Elliotson's own words.

"The animal functions demonstrate mind. This is seated in the brain, to which the spinal marrow, nerves, and voluntary muscles are subservient. Mind is the functional power of the living brain. As I cannot conceive life any more than the power of attraction, unless possessed by matter, so I cannot conceive mind unless possessed by a brain, or by some nervous organ, whatever name we may choose to give it, endowed with life. I speak of terrestrial or animal mind; with angelic and divine nature we have nothing to do, and of them we know, in the same respects, nothing. To call the human mind positively a ray of the divinity, (*Divinæ particula auræ, Ex ipso Deo decerptus, Ex universa mente delibatus*) appears to me absolute nonsense. Brutes are as really endowed with mind—with a consciousness of personality, with feelings, desire, and will, as man. Every child is conscious that it thinks with its head, and common language designates this part as the seat of mind. Observation shows that superiority of mind in the animal creation is exactly commensurate with superiority of brain; that activity of mind and of brain are coequal; and that as long as the brain is endowed with life, and remains uninjured, it, like all other organs can perform its functions, and mind continues; but, as in all other organs, when its life ceases, its power to perform its function ceases, and the mind ceases; when disease or mechanical injury affects it, the mind is affected—inflammation of the stomach causes vomiting, of the brain, delirium; a blow upon the loins causes nephritis or hæmaturia; a blow upon the head stuns; if originally constituted defective, the mind is defective; if fully developed and properly acted upon, the mind is vigorous; accordingly as it varies with age, in quality and bulk, is the mind also varied—the mind of the child is weak and very excitable; of the adult vigorous and firm; and of the old man weak and dull, exactly like the body; and the character of the mind of an individual agrees with the character of his body, being equally excitable, languid, or torpid, evidently because the brain is of the same character as the rest of the body to which it belongs:—the female mind exceeds the male in excitability as much as her body; the qualities of the mind are also hereditary, which they could not be, unless they were, like our other qualities, corporeal conditions; and the mind is often disordered upon the disappearance of a bodily complaint, just as other organs, besides the brain, are affected under similar circumstances. The retrocession of an eruption may affect the lungs, causing asthma, the bowels, causing enteritis, or the brain, causing insanity;—phthisis and insanity sometimes alternate with each other; just like affections of other organs; the laws of the mind are precisely those of the functions of all other organs;—a certain degree of excitement strengthens it, too much exhausts it, physical agents affect it, and some specifically, as is the case with other functions, for example, narcotics. The argument of Bishop Butler, that the soul is immortal and independent of matter, because in fatal diseases the mind often remains vigorous to the last, is perfectly groundless, for any function will remain vigorous to the last, if the organ which performs it is not the seat of the disease, nor much connected by sympathy, or in other modes, with the organ which is the seat of the disease;—the stomach often calls regularly for food and digests it vigorously, while the lungs are almost completely consumed by ulceration. All the cases that are adduced to prove the little dependence of the mind upon the brain, are adduced in opposition to the myriads of others that daily occur in the usual course of nature, and are evidently regarded as extraordinary by those who bring them forward. An exact parallel to each, may be found in the affections of every other organ, and each admits of so easy an explanation that it may be always truly said 'Exceptio probat regulam.'"

It will be said that the above passage savours strongly of materialism. The object of every rational being ought to be to arrive at truth, without any regard to popular opinion or prejudice. If the physical facts are as stated, all the cry of materialism in the world cannot alter them. They only show that, as the Deity is omnipotent, he can display his power through the medium of matter as well as through that of spiritual existence. If any one rests his hope of a future existence solely on the belief that the mind is immortal, he perhaps places it upon an insecure foundation. If the ground pointed out by Dr. Elliotson in the following passage is not safe enough to support our belief, we fear that we cannot have a safer shown us, either from scripture, or from the power of reason.

"In contending that the mind is a power of the living brain, and the exercise of it the functions of that organ, I contend for merely a physical fact, and no Christian who has just conceptions of the Author of Nature will hesitate to look boldly at Nature as she is, lest he should discover facts opposite to the pronunciation of his revelation; for the word and the works of the Almighty cannot contradict each other. Lord Bacon accordingly, in a very memorable part of his writings, directs the physical inquirer to be uninfluenced by religious opinions, as the more independently truth is pursued, the sooner will it be gained; and the sooner will the real meaning of the divine statement of natural things, and the conformity of this to physical fact, be established.

"The assertion, however, that the mind is a power of the living brain, is not an assertion that it is material, for a power or property of matter cannot be matter.

"Neither is it an assertion that this power cannot be a something immortal, subtle, immaterial, diffused through and connected with the brain. A physical inquirer has to do with only what he observes. He finds this power, but attempts not to explain it. He simply says the living brain has this power, medullary matter though it be. Seeing that the brain thinks, and feels, and wills, as clearly as that the liver has the power of producing bile, and does produce it, and a salt the power of assuming a certain form, and does crystallize, he leaves others at liberty to fancy an hypothesis of its power being a subtle, immaterial, immortal substance, exactly as they fancy life to be subtle fluid, or, perhaps, though very extraornarily, the same subtle fluid (if subtlety is immateriality and immortality,) elucidating the subject no more than in the case of life, and equally increasing the number of its difficulties; as though we were not *created* beings or not altogether ignorant what matter is, or of what it is capable and incapable; as though matter exhibited nothing but extension, impenetrability, attraction, and inertness; and as though an Almighty could not, if it seemed good to him, have endowed it, as he most evidently has, with the super-addition of life, and even of feeling and will.

"Nor does this assertion imply that the resurrection from the dead is impossible or even improbable. The physical inquirer finding the mind a power of the brain, and abstaining from hypothesis, must conclude, that, in the present order of things, when the brain ceases to live, the power necessarily ceases—that in the language of scripture, dust we are, and unto dust we all return,—that our being is utterly extinguished, and we go back to the insensibility of the earth whence we are taken. Our consciousness of personality can afford no reason for imagining ourselves immortal and distinct from earth, more than brutes; for this the fly possesses equally with the philosopher about whose head it buzzes. The moral government of the world, the sublime reach of our acuteness, the great improvableness of of our characters—

> '———this pleasing hope, this fond desire,
> This longing after immortality,
> ———This secret dread and inward horror
> Of falling into naught,'

have been thought to completely harmonise with a life hereafter, but certainly fall so short of proof, as to have left the wisest of antiquity —Solomon, Socrates, Cicero, &c.—in uncertainty, when they saw how death reduces us to our pristine elements. The hope of immortality inspired by such reflections, assisted by the desire of explaining every thing in some way or other, first, I apprehend, made men attempt to find, in the imagined ethereal essence of the soul, a reason for our not totally perishing as our senses would lead us to suppose. But, because we refuse to listen to a mere hypothesis respecting spirit, we are not *necessarily* to deny the resurrection. For if a divine revelation pronounce that there shall be *another order of things* in which the mind shall exist again, we ought firmly to believe it, because neither our experience nor our reason can inform us what will be hereafter, and we must be senseless to start objections on a point beyond the penetration of our faculties. The scripture so pronounces,—not that we are naturally immortal, but that 'in Adam (by nature) all die,'—have our being utterly extinguished, and in another order of things—when the fashion of this world shall have passed away and time shall be no more, that in Christ (by the free, additional, gift of God, granted through the obedience of Christ, but, consequently, *by a miracle*, not by our nature,)--we shall all again be made alive. St. Paul declares the resurrection to be a '*mystery:*' it must in truth be a *miracle*, and therefore the inquiry 'how can these things be,' altogether fruitless. The miracle of Christ's resurrection, to which the scriptures refer us as the foundation of the hope of a future state, would not have been necessary to convince us of a necessary truth, discoverable by sense and reason. That the promises of the New Testament are the proper and only foundation of our hopes of immortality was the opinion of the late Regius Professor of Divinity in the University of Cambridge, whose powerful intellect and sincere love of truth render his opinions weightier than the decrees of councils. "I have no hope of a future existence," says he, "except that which is grounded on the truth of Christianity." While those are wrong who think there can be any thing like an argument against a future life in another order of things, if declared by a revelation, it is strange that others should think it necessary to attempt rendering the pronunciations of scripture more probable, and that by an hypothesis, which is at best but the remains of unenlightened times, and should require any assurance besides that of the gospel, which they read, "has brought life and immortality to light." They should reflect that the belief of an immaterial substance removes no imagined difficulty, as it is the peculiar doctrine of scripture, in distinction to that of all the heathen philosophers and people, that the resurrection will be positively of *body*—that in our *flesh* we shall see God, and that therefore our minds must appear as much a property of body hereafter as at present.

"Thus only, the christian doctrine of a future state is reasonable. The heathen doctrine was grounded on the supposed inherent immortality of a supposed substance distinct from the body. The christian doctrine teaches the resurrection of what we obviously are—bodies, and that through a miracle of the Almighty."

Blumenbach classifies the faculties of the mind into *perception*, *attention*, *memory*, *imagination*, *abstraction*, *judgment*, and *reason*, in the first or *intellectual* order. There is another order relating to *appetency*. This consists of *desire*, *aversion*, and *volition*. This is, perhaps, as imperfect an arrangement as could well be contrived. Dr. Copland gives a

more extended arrangement in the notes already mentioned. This contains all the mental faculties as they are manifested in their compound form, but as the classification is founded upon purely metaphysical principles, if the brain be really the organ of the mind, it is liable to all the objections applicable to similar arrangements. Whether the phrenological *system* of Drs. Gall and Spurzheim be perfect or not, it appears to us that the *principle* on which their doctrines rests, is the only one founded on nature, as relates to the faculties of the mind; for unless these faculties can be traced to some *physical* organ, it is not likely that their seat can ever be discovered by *metaphysical* researches. So much has been said on this subject, as to render it fruitless to attempt to adduce any new argument either in favour or against the doctrine. Its truth or fallacy must be decided by facts alone; and so far as these have been hitherto adduced, every one divested of prejudice, and who takes the trouble to examine them, must confess that they tend to confirm the truth of it. Dr. Elliotson has given a long note in favour of the phrenological classification of the mental faculties, and he shows that the experiments of Majendie, Fontana, Fleurens, Rolando, and others, do not tend to invalidate that arrangement.

We shall next proceed to the doctor's notes on the motion of the blood, and here the principal subject of discussion is the thoracic vacuum, so much insisted on by Dr. Carson, of Liverpool, and several other physiologists. Dr. Carson, supposing that the weight of the blood, the length of its course, the various obstacles from angles, friction, &c., with which it meets in the vessels, renders it necessary that some other power than that of the left ventricle of the heart should assist in the circulation, has assigned that power to a vacuum which he supposes to take place in the chest during inspiration. As a further assistance still, there is, moreover, a vacuum supposed to take place in the cavities of the organ itself during each diastole. It is useless to build any theory upon a supposititious fact, when that fact can be either proved or disproved by a simple experiment. To show that the propelling power of the left ventricle, or, at least, some power situated between the left auricle and the right auricle, in the line of circulation, *is sufficient* to carry the blood round to the latter cavity, *without any suction power* to attract it in this direction, let a ligature be placed round the root of the inferior cava, close to the heart; then let an incision be made into the vessel, close to that ligature, on the further side of it from the heart, and it will be seen that the blood will not only run out by the force from behind, but it will be thrown to some distance from the orifice. This will happen let the animal be held in any position we like. This experiment we have several times performed on rabbits, and we never noticed any lack of *vis a tergo* to make the animal bleed to death in a few seconds. This fact, alone, proves that there is no *necessity* for a suction power to carry the blood round, which is one step towards proving that such a power does not act on it, for nature seldom does things in vain. In the next place, is there a vacuum produced by the expansion of the right auricle? and if there be, can it have any influence on the blood in the veins? Before the first question can be answered, it is requisite to decide whether or not the auricle *dilates itself*, or is *dilated* by the blood being driven into it? We must keep in mind that the right auricle is scarcely any thing more than a membranous receptacle, or sinus, possessing but few muscular fibres. Admitting, therefore, that it expands by the elasticity of this structure, (which is the only inherent power of dilation that it can possess, for there is no mechanical contrivance connected with it for that purpose,) the force with which such a structure could do so, would be very trifling; not enough, indeed, to overcome the pressure of the atmosphere on it communicated through the lungs and diaphragm; for it must be remembered that the auricle expands during expiration, when it is acknowledged that no vacuum exists in the thorax. Now, we have frequently taken hold of the heart during its regular action, at least, as regular as it could act immediately after opening the chest, and from the very small degree of pressure exerted by the *ventricles* even against the hand, we are fully satisfied that the dilating force is next thing to nothing. It amounts to no more than a mere relaxation of the fibres, caused by the elasticity of the structure, after this elasticity has been reduced below its medium, by the vital contractility of the muscular fibres. If the dilating force of the ventricles is so small in degree, that of the auricles must be, at any rate, ten, if not twenty times, smaller, if we may infer from the quality and thinness of their walls. Indeed, when the auricle dilates, it hardly produces a *sensible* pressure against the hand, when no blood is allowed to flow into it, as when the two cavæ have been secured by ligatures; still it has enough force to dilate a little, but not nearly to the extent that it expands, or rather is expanded, when the blood is allowed to flow regularly through it. When a ligature is tied round the vena cava inferior, close to the heart, the force from behind is sufficient to dilate the vessel below that ligature very considerably beyond its common diameter, and as the right auricle partakes a good deal of the qualities of veins, the same force will expand that cavity much beyond the point it can attain by its own inherent power of dilatation when void of blood. Any one, who will take the trouble to do so, may satisfy himself of the truth of these facts, and few experiments are less complicated, or attended with less difficulty.

It would appear then, that the suction power of the right auricle, if anything, is next to nothing, and that the blood will flow into that cavity, and would flow beyond it by the mere propelling force of the left ventricle. But it has been said that the *right ventricle* adds to

this suction power; for, as maintained, the right ventricle, in dilating, forms a vacuum, and draws the blood from the auricle; consequently the column from the veins follows, and supplies the place of this in the auricle. Those who suppose they can discover this power should consider, that, when the *dilatation* of the *ventricle* takes place, the *auricle contracts;* the column from the veins cannot, therefore, enter the latter cavity while the supposed suction power of the former exists. During the dilatation of the right ventricle, the blood in the cavæ, far from being drawn into the auricle at this time, regurgitates, from the contraction of this cavity, and produces a regular pulsation in these veins; and here the pulse is sensible to the eye, owing to the highly elastic property of the veins in the transverse direction, whereas it is not visible in the arteries, the root of the aorta excepted. It is doubtful, however, whether this venous pulsation is produced by *regurgitation*, in the strict sense of the word, from the auricle; for the venous diastole is more probably produced by the force from behind propelling the blood towards the auricle at the very instant that this cavity is shut, distending, consequently, the venous trunks a little beyond the medium of their elasticity; and as soon as the systole of the auricle is over, the coats of the venous trunks resume their medium of caliber, and with the assistance of the regular and continued *vis a tergo*, press the column into the auricle, so as to dilate it in the same manner as the veins were dilated the instant before. The auricle at the same time, being now in a relaxed state, the contractile influence having ceased for an instant, has a tendency to expand a little, from the inherent elastic properties connected with its structure.

Now, with respect to the thoracic vacuum. We shall not at present inquire whether or not a vacuum does take place in the chest during inspiration, but will admit the fact, and see what influence it can have over the motion of the blood in the veins. In man, the veins connected with the superior cava would, most of them, during by far the greater part of his life, empty themselves by the force of gravitation, so that very little more power is necessary here, from the left ventricle, than is sufficient to carry the blood to the capillaries. This is certainly done against the force of gravity, but no thoracic vacuum is required to return the blood from this part of the venous system. Such a vacuum, therefore, if it have any effect, is more particularly required by the *inferior* cava and its branches. Now the atmosphere presses in all directions, with a force equal to about fifteen pounds on every square inch. There are very few human bodies whose surface is more than 3,500 square inches. Taking the surface at this measurement, and allowing that 15 pounds presses upon every square inch, the whole weight of atmosphere supported by the body, will be 52,500 pounds. Now the next question is, how many square inches are the whole surface of the air-cells of the lungs equal to? Lieberkühn makes the surface of these cells equal to 1,500 square *feet*, or 216,000 square inches, being nearly *sixty-two* times greater than the surface of the whole body, bearing, therefore, a column of atmosphere weighing sixty-two times greater than the surface of the skin does. Leiberkühn's calculation is, probably, however, considerably exaggerated respecting the extent of surface possessed by the air-cells. When we consider the minuteness of the air-cells, and that they are so numerous as to be able to contain 200 cubic inches, or more, of atmospheric air during inspiration, there is some reason to infer that their surface is equal to, if not greater than, that of the skin, and that they consequently bear a weight equal to that which presses on the surface of the body. We will allow it to be equal only, but the probability is, that it is greater. Now as soon as a vacuum is formed in the chest, the pressure of the atmosphere on the surface of the air-cells expands these cells *at the very instant* that the ribs are raised, or that the diaphragm descends, and the vacuum is filled up. In fact, we cannot expand the chest without taking in air, for if we close the mouth and nostrils, and attempt to raise the ribs, the diaphragm is pressed up involuntarily by the abdominal muscles, and a vacuum is prevented from taking place. If, as we said before, the quantity of pressure be allowed as equal on the surface of the lungs and on that of the skin, there is still the weight of a column of blood, reaching from the extremities to the heart, to be raised against its own gravity by the pressure on the latter surface. If, therefore, we take the *absolute* pressure on both surfaces to account, the blood in the lower cava must necessarily stand still upon its own gravity, unless moved by some other power. But the fact is, that, although the pressure of the atmosphere be equal to 52,500 pounds on the surface of the body, still, supposing that a *perfect vacuum* did take place in the chest, the propelling pressure of the blood in the cava, where it enters the chest, *will be only as fifteen pounds to the square inch, according to the diameter of the caliber of this vessel;* and as a transverse section of the inferior cava, when quite full, would not present a surface equal to three-fourths of a square inch, a weight here equal to about eleven pounds and a quarter, even in a perfect vacuum, would balance all the pressure of the atmosphere on the surface of the body. But of these eleven pounds and a quarter, we have still to deduct the weight of the column of blood. Let us suppose the body to contain ten pounds of blood, and that it is equally distributed in the arteries and veins. There is generally more in the veins, but we will take it as equal. Out of the five pounds contained in the veins, we will suppose three and a quarter (which, if any thing, is less than the exact proportion) to be in those connected with the *inferior* cava. Now, when these three pounds and a quarter are deducted from the eleven pounds and a quarter, it leaves a balance of eight

pounds in favour of the pressure of the atmosphere against three-fourths of a square inch of *vacuum* (for we still suppose the thorax to be in a state of vacuum.) As the pressure of the atmosphere on the surface of the air-cells in the lungs, is equal to fifteen pounds to the square inch, it imparts of course a weight equal to eleven pounds and a quarter to every three-fourths of a square inch. When we now deduct the eight pounds (the weight to which the pressure in the inferor cava is equal) out of these eleven pounds and a quarter, (the weight on equal surface in the lungs) it leaves a balance of three pounds in favour of the pressure in the lungs, over that on the blood in the cava. It follows then, that the vacuum produced in the chest, during inspiration, is filled instantaneously by the pressure of the atmosphere in the lungs, with a force equal to eleven pounds and a quarter, whereas the force with which the pressure on the surface of the body drives the blood towards it, through the vena cava, is only equal to eight. In other words, the proportions are as 3 to 0 in favour of the vacuum being filled by air, rather than by the blood from the veins, even if these vessels did not possess any property of resisting the pressure of the atmosphere by the elasticity of their coats. We have here also only taken the simple *weight* of the column of blood into calculation, whereas its friction against the vessels and the angles, and the counter-streams which the current meets, ought likewise to be taken into account.

Our limits will not permit us to follow this subject further at present, otherwise we could show, both from experiments and from deductions founded on natural laws, that the influence of this vacuum on the motion of the blood in the veins is a thing next to, if not a perfect, nullity. It should be considered in this inquiry, that the blood, like every other fluid, will find its level in the vessels; that, as these vessels adapt their caliber to the quantity they contain, so as to preserve themselves always full, the fluid will rise in the veins to the same height as in the arteries, namely, up to the heart, by the same laws as it does in any other vessels which communicate, or in subterraneous canals; and that, consequently, the force required of the left ventricle to move the blood through the vessels situated *below* the level of the heart, is not necessarily much more than sufficient to overcome the inertia of the column, and the obstruction which its motion meets with from the angles and curves of the passages.

We cannot follow Dr. Elliotson through his very interesting and instructive notes on the chemical changes which take place in the blood in the lungs; on the source of animal heat; on growth, nutrition, absorption, secretion, conception; on the difference of the sexes; on the genital functions, and numerous other very interesting subjects. His remarks on the varieties of mankind, are also both entertaining and interesting. He considers it probable that all the human race are descendants of two individuals, and that the varieties now observed on different parts of the globe, have been caused by accidental circumstances; by the nature of the soil, climate, food, &c.

"In favour of the opinion that we are all brothers, it may be urged—1. The universal simplicity of Nature's causes would induce us to imagine that, as, if the varieties among us are accidental, two individuals were evidently sufficient for the production of the rest of mankind, no more than two were originally created. Nor should I deduce a contrary presumptive argument from the length of time during which immense portions of the earth must have thus remained unpeopled. One of Nature's objects seems the existence of as much successive life as possible, whether animal or vegetable, throughout the globe. For this purpose, every species of animal and vegetable possesses an unlimited power of propagation, capable of filling the whole world, were opportunity afforded it. The opportunities of exertion are indeed very scanty, compared with the power: climate, soil, situation, may be unfavourable; one vegetable, one animal, stands in the way of another; even the impediments to the increase of some, act through them as impediments to others. The incessant tendency of the power of multiplication to exert itself, seizes every opportunity the moment it is presented, and thus, though every living object has a fixed term of existence, and may be carried off much earlier by innumerable circumstances, all nature constantly teems with life. The slow increase of mankind could not interfere with this apparent object of nature; the deficiency of our race must have invariably been fully compensated by the opportunities which it afforded for the multiplication of other existences: for that man alone was not designed to enjoy the earth, is shown by the vast tracts of land still but thinly peopled. The infinitely rare opportunities afforded for the maturity of the intellectual and moral powers born with every human being, may afford still greater surprise than the extent of country unoccupied by man.

"2. *Analogical and direct facts* lead to a conclusion that none of the differences among mankind are so great as to require the belief of their originality.

"Animated beings have a general tendency to produce offspring resembling themselves, both in mental and corporeal qualities.

'Fortes creantur fortibus et bonis;
Est in juvencis, est in equis patrum
Virtus: nec imbellem feroces
Progenerant aquilæ columbam.'

"An exception occasionally occurs, much more frequently, we are told, in the domestic than the wild state,—the offspring differs in some particular from the parents; and by the force of the general tendency transmits to its offspring its own peculiarity. By selecting

such examples, a breed peculiar in colour, figure, the form of some one part, or in some mental quality, may be produced. Thus, by killing all the black individuals which appear among our sheep, and breeding from the white only, our flocks are white; while, by an opposite practice pursued in some countries, they are black: thus a ram accidentally produced on a farm in Connecticut, with elbow-shaped fore-legs, and a great shortness and weakness of joint indeed in all four extremities, was selected for propagation, and the ἀγχὰν breed, unable to climb over fences, is now established: thus some breeds of hares have horns like the roebuck: the Dorking fowl has two hind claws; and fowls, in short, are bred in every conceivable variety. Individuals, distinguished from others by no greater differences than those which thus spring up accidentally, cannot be supposed to belong to a separate species. Upon the comparison of these differences, depends the analogical argument first employed by Blumenbach. Finding the ferret (*mustela furo*) to differ from the pole-cat (*m. putorius*) by the redness of its eyes, he concludes it is merely a variety of the same species, because instances of this deviation are known to occur accidentally in other animals; but he concludes the African elephant is of a species distinct from the Asiatic, because the invariable difference of their molar teeth is a description which naturalists have never found accidental. Now there exist among mankind no differences greater than what happen occasionally in separate species [varieties?] of brutes.

"The colours of the animals around us, horses, cows, dogs, cats, rabbits, fowls, are extremely various—black, white, brown, grey, variegated.

"The hair of the wild Siberian sheep is close in summer, but rough and curled in winter; sheep in Thibet are covered with the finest wool, in Ethiopia with coarse stiff hair; the bristles of the hog in Normandy are too soft for the manufacture of brushes; goats, rabbits, and cats of Angouri, in Anatolia, have very long hair, white as snow and soft as silk.

"The head of the domestic pig differs as much from that of the wild animal, as the negro from the European in this respect; so the head of the Neapolitan horse, denominated ram's head on account of its shape, from that of the Hungarian animal remarkable for its shortness, and the extent of its lower jaw; the cranium of fowls at Padua is dilated like a shell, and perforated by an immense number of small holes; cattle and sheep in some parts of our own country have horns, in others not; in Sicily sheep have enormous horns; and in some instances this animal has so many, as to have acquired the epithet polyceratous.

"The form of other parts is no less various. In Normandy, pigs have hind legs much longer than the fore; at the Cape of Good Hope, cows have much shorter legs than in England; the difference between the Arabian, Syrian, and German horses, is sufficiently known; the hoofs of the pig may be undivided, bisulcous, or trisulcous.

"These are regarded by naturalists as but accidental varieties, yet they equal or surpass the varieties existing among mankind. We are consequently led by analogy to conclude, that the differences of nations are not original but acquired, and impose no necessity for believing that more than one stock was at first created.

"3. *Direct facts* harmonise with this conclusion. All races run insensibly one into another, and therefore innumerable intermediate examples occur where the distinction between two varieties is lost. Again, no peculiarity exists in any variety which does not show itself occasionally in another. Many instances of these facts have been already related. The difficulty of regarding the negro as of the same stock with ourselves vanishes, on viewing these circumstances, and on reflecting that he and ourselves are two extremes, one of which may have sprung from the other by means of several intermediate deviations, although experience may not justify us in supposing any single deviation of sufficient magnitude. Lastly, both the males and females of all the varieties breed together readily and in perpetuity—an assertion which cannot be made in regard to any different species of brutes."

The following account, given by Volney, and confirmed by Mr. Crompton, a friend of Dr. Elliotson's, of the power of climate upon the generative function, is very curious and singular.

"'During five hundred and fifty years that there have been Mamlouks in Egypt, not one of them has left subsisting issue; there does not exist one single family of them in the second generation; all their children perish in the first or second descent. Almost the same thing happens to the Turks; and it is observed that they can only secure the continuance of their families, by marrying women who are natives, which the Mamlouks have always disdained. Let the naturalist explain why men, well formed, and married to healthy women, are unable to naturalize on the banks of the Nile, a race born at the foot of Mount Caucasus! and let it be remembered, at the same time, that the plants of Europe in that country are equally unable to continue their species! Some may refuse to believe this extraordinary fact, but it is not on that account less certain; nor does it appear to be new. The ancients have made observations of the same nature: thus, when Hippocrates asserts, that among the Scythians and Egyptians, all the individuals resemble each other, though they are like no other nations; when he adds, that in the countries inhabited by these two races of men, the climate, seasons, elements, and soil possess an uniformity no where else to be found, does he not recognize that kind of exclusion of which I speak? When such countries impress so peculiar a character on every thing native, is it not a

reason why they should reject whatever is foreign? It seems, then, that the only means of naturalizing animals and plants, would be to contract an affinity with the climate, by alliance with the native species; and this, as I have before said, the Mamlouks have constantly refused. The means, therefore, by which they are perpetuated and multiplied, are the same by which they were first established; that is to say, when they die, they are replaced by slaves brought from their original country."'

We wish our limits had permitted us to notice more of the subjects treated by Dr. Elliotson in these notes, but we are compelled to stop short against our inclination, as we have neither time nor room to proceed further.

With respect to Mr. Warren's work, it is particularly interesting, and it proves the author to possess an ingenious mind, although we think many of his views are founded in error.

From the London Medical Gazette.

SINGULAR CASE OF DISEASE, *occupying the whole extent of the Abdomen on one side, and the Pelvis, external to the Peritoneum.*

By S. D. Broughton, Esq. Surgeon to the 2d Life Guards, &c. &c.

W. B. æt. 29, a musician in the band of the 2d Life Guards, had, during more than a year past, gradually fallen away in condition, and suffered latterly repeated attacks of violent pain, referred to the back and hip of the left side, not higher up than the loins. His appearance was pallid and unhealthy, and his bowels costive and irregular; but the appetite natural. Frequently he was much annoyed with distention from wind, which was generally removed by the introduction of a clyster pipe. Relief was always obtained by purgatives and anodynes. His emaciation and debility of late obliged him to be confined to the hospital, where he had frequently received temporary relief; but getting better, he was allowed to return to his lodgings, deriving benefit from the open air. During the spasmodic attacks, the heart and arteries would beat high and rapidly, and pain be complained of in the lower bowels on the left side, and loins. On examination, the belly was always soft and yielding, and without tenderness on pressure; nor was any enlargement detected, but some occasional distention from wind. The stools were always of a natural appearance; the tongue clean, but rather dry; and the skin moist. The urine was sometimes turbid, not high coloured, and occasionally contained a predominance of acid.

Between the attacks of pain he was comfortable and cheerful, though looking as if labouring under disease. The quantity of urine passed during the twenty-four hours was apparently much as usual. Latterly there was at times pain referred to the left groin, but no affection of the glands or other disease was perceivable to the touch. He continued to enjoy his meals of broth, &c. and to digest his light diet. During the attacks of pain, the respiration would be hurried.

The fifteenth of February was the date of his last admission into the regimental hospital; when, the heart and arteries acting strongly, a pint of blood was taken from the left arm, which exhibited a buffy coat, and cupping. Leeches were applied to the side next day: constant attention was necessary to the state of the bowels, and medicine easily produced liquid stools. He was relieved, though the beating of the heart and arteries continued, and so as to be perceptible in the neck, the groins, and the limbs, and felt also in the loins. The pulse never much exceeded from ninety to one hundred, and gave an impression to the finger and to the hand, (when placed over the region of the heart,) similar to that which occurs in *pericarditis*, but without pain beyond the lower part of the abdomen and loins. The constitutional debility increased, and the pulsation continued, with periodical attacks of pain, which were always removed by leeches, laxatives, and moderate anodynes, with occasional blisters to the seat of pain. From the day of his admission sixty minims of the *liquor antimonii tartarasati* were given every four hours in saline mixture; and rhubarb and carbonate of soda twice a day. Subsequently the antimonial wine was reduced to forty minims, and fifteen of the tincture of digitalis added, as some nausea was excited by the antimony. The pulsation continued with diminished force and quickness latterly, but the application of leeches was repeated occasionally whenever pain came on, and with laxatives and anodynes afforded great relief.

On the twenty-first of March his pulse had fallen to forty-eight, though the pulsation was still strong and visible as before, and he breathed in rather a hurried and laborious manner. The night before he had experienced a violent paroxysm of pain, with increased frequency in the pulse, and in the morning was much relieved from anodynes, &c. as usual. The digitalis and antimony were omitted. He appeared to be much debilitated, though free from pain, except a little soreness, which was soon removed by small doses of æther and laudanum in camphor julep, with extract of hyoscyamus, and the pulse rose to seventy-four, and lost its former character in a great degree, giving an impression of more natural action. On the morning of the twenty-second, at seven o'clock, he had another attack of pain and quickness of the pulse, from which the usual remedies recovered him, and about half past eight he expired, without any urgent symptom, collected in mind, and perfectly quiet and sensible.

Sectio Cadaveris.—Upon examining the body about twenty-four hours after death, the following appearances presented themselves. In the thoracic and abdominal cavities, there were found about three or four pints of bloody serum. The pericardium contained a small quantity of pure serum; the lungs appeared

perfectly healthy; the heart was larger, and its parts were more strongly developed than usual. The thoracic membranes exhibited no signs of inflammation. The abdominal viscera showed no appearance of diseased structure or inflammation; but the cavity of the abdomen, on the left side, was occupied, from the diaphragm to the bottom of the pelvis, with a mass incumbent on the spine, and forcing the liver, stomach, &c. upwards; which mass seemed, at first sight, to be composed of coagulum, covered with a shining white membrane.

On removing the viscera, in order to get at the attachments of this mass, it was found to adhere strongly to the diaphragm, the whole extent of the left side, the great arch of the stomach, the pancreas, part of the colon, the cœcum, and the rectum. When removed, it measured nearly twenty inches in length, and was narrower in the centre than at either end. The left kidney was enclosed in its upper portion, and partly adhered to its membranous coat. The kidney itself was perfectly healthy in structure, but somewhat large. The cavity of the pelvis was so much occupied by this mass, that the rectum was closely pressed upon, and the bladder contracted to a very small oblong form; in its internal structure, as well as that of the intestinal canal, appearing free from inflammation, and healthy. Three of the dorsal vertebræ, against which the mass rested, were rough and irregular on their surfaces towards the left side, as if absorption of bony matter had taken place. Where the bifurcation of the aorta takes place, there was thickening of its coats for the space of about two or three inches, so as to contract its bore, and condensation of cellular substance appeared externally. Upon examining the main blood-vessels throughout, no other diseased appearance was observable; and their internal coats were free from redness.

When the shining white coat of the mass was divided, its contents every where displayed a continuity of dark coloured coagulum, which, on being washed, presented the usual evidence of fibrinous matter.

From the Lancet.

A CASE OF HEMORRHAGE, IN WHICH THE PLACENTA WAS ATTACHED OVER THE OS UTERI. RUPTURE OF THE UTERUS BY ITS OWN ACTION. By John Greening, M. D.

Mrs. ———, æt. 40, residing at White Lady Aston, near Worcester, requested my immediate attendance, June 4th, 1827. On my arrival, she informed me, she had had flooding come on whilst she was taking her breakfast, to a degree which had caused great consternation to herself and family, but that it had nearly ceased since she had been in bed. She was five months gone with child; had not been quite so well lately, having been obliged to part with her servant, which caused her to exert herself more than common. Complains of headach; pulse full and strong; had been troubled with palpitation of the heart; bowels regular; no labour-pains, but a slight discharge continues. Ordered to be kept quiet, and repose of body in a horizontal position; light covering; cool air admitted into the room; cloths, dipped in vinegar water, to be kept constantly applied to the abdomen; to take a little cold gruel or lemonade. Mittr. sanguis ad ℥xii.; ℞. Infus. rosæ, ℥vi.; magnes sulphat ℥ss. Mx. capt. coch. iij. 4tis horis.

5. Better; discharge less. ℞. Habeat olei ricini, ℥ss. tertia, qq., hora repetend donec plene responderit alvus.

To keep her bed, and pay attention to her diet; to avoid over exertion; and if the palpitation returns, to lose blood. This was her tenth pregnancy; in the last, Mr. Carden, surgeon of this city, attended her of a seven months child; in the previous labour I was sent for; that was a preternatural case, the scapula presenting, and a portion of the funis; she was not quite gone her full time; she had a good recovery. When last at market, a person accidentally pushed her down; she did not find herself hurt by the fall, and returned home very well.

7. Repet. med. Ol. ricini.

10. Much better, but very low and weak; no discharge; complains of slight pains in the bowels. ℞. P. rhei, ℈ij.; magnesia, ʒi.; conf. opii, ʒi.; aquæ menthæ, ʒvi.; st. lavendulæ comp. ʒii. Ft. mist. cujus capiat coch. mag. iij. ter in die.

July 7. I was again sent for about ten o'clock P. M.; she had been exerting herself, and a return of the hemorrhage came on about seven o'clock; pulse tranquil; bowels open; free from labour pains. Upon examination, there was a quantity of coagulum in the vagina, which was removed, but others soon formed; the os uteri open to the size of a half-penny; a portion of the placenta could be felt on the anterior part of the cervix uteri; the coagulum which had now formed I left in the vagina, and remained with her till two A. M.; vinegar cloths were kept constantly applied, and the discharge stopped. ℞. Infus. rosæ acid. ʒij.; magnes. sulph. ʒiv. Ft. mistura cujus capiat partem tertiam quarta quaque hora.

8. Nine o'clock A. M., Mr. ——— called at my house, and informed me a litttle coagulum was thrown off about every quarter of an hour, but very trifling in quantity; refreshed by sleep; to be kept quiet. Admitt. liberrime aer gelid.

9. Better.

14. Had no discharge since Monday. Habeat ol. ricini, ʒiv. h. s.

21. Has had a trifling return of the discharge; complains of palpitation. V.S. ʒvi.

28. Discharge increased; repeat the vinegar cloths, and to be kept quiet.

29. I saw her about nine o'clock, P. M.; a large coagulum had come away; there was a great change since I last saw her; strength reduced; pulse feeble and small; ninety-five

in a minute; face pallid; she said the discharge had not entirely stopped; all this week she had kept her bed, and used the cold application. Upon examination, I found a coagulum lying in the vagina, the os uteri dilated to the size of a dollar, the placenta attached over it. I stated her danger, and requested the nurse to be sent for, that I might proceed to delivery; it alarmed her much, and she would not accede to it, for she never heard of a woman being delivered without labour pains. I told her such cases did occur, and advised her to consent, if her life was to be saved. A friend of her's had called upon Mr. Carden, a week ago, for his opinion; he desired that she should keep her bed, and use the same means which I had adopted; it was her particular wish I should see him, before any thing was done; and he agreed to go with me at six o'clock. On our arrival, we found her much the same as when I left; the discharge still continuing, Mr. Carden examined her, and said it was a very clear case, that the placenta was actually protruding, and her life was not safe a minute; a large gush of blood might ensue, and death be the result, before any assistance could be given her. Cautiously introducing my hand through the placenta and membranes, I brought down the feet; when the child was about half born, she complained of most excruciating pains in her back. We now thought the uterus was beginning to act, and he advised me to wait a little; the pulse was at this time rather fuller; she took a little brandy and water occasionally; and after a short lapse of time the child was born, but dead; the funis encircled round its neck. We now applied our hands to the abdomen, and being of opinion, that the uterus was very well contracted, we removed the placenta, which was lying loose in the vagina; there was no hemorrhage; her pulse became fuller, and she felt, as she said, comfortable. However, before I had finished washing my hands, she complained of being faint; her countenance became pale; pulse feeble; a discharge of blood and wind took place; the abdomen was greatly distended; and when I applied my hand to it, a great expulsion of blood and wind again took place; the uterus contracted under the hand; the faintness continued; brandy was administered. Mr. Carden came up stairs, and was much surprised to find such a change, and advised me to introduce my hand; the discharge was not very profuse; there were no coagula; the uterus did not contract, although I irritated it with my fingers, and cautiously introducing my hand still farther, I found my fingers among the intestines. Never having met with a case of ruptured uterus before, I was at a loss to pass any correct judgment upon the case, and requested Mr. Carden to examine; he soon told me it was an extensive rupture, and the intestines were coming down, which he pushed up; death soon put an end to her sufferings; the uterus was so thin, it was like a piece of paper; an examination of the body could not be obtained.

From the Medico-Chirurgical Review.

HEPATIC DISEASE. Drs. Graves and Stokes.

[Meath Hospital, Dublin.]

In the following case, related by Drs. Graves and Stokes, from the Meath Hospital, some observations will be found, corroborating certain opinions, which we gave in our review of Dr. Bright's work, in the second Fasciculus of this number, page 319.

Case.—J. M'Clusky, aged 11 years, of scrofulus habit, labours under considerable swelling of the abdomen, with fluctuation and tympanitis. "The right hypochondrium appears rather full; upon examination, the liver can be felt extending across the left hypochondrium, and as far down as the umbilicus, presenting a defined edge." He had œdema of the left leg—no cough or dyspnœa—good appetite—much thirst—urine copious, light-coloured—and depositing albumen in abundance when heated. Bowels are regular, the pulse 125, tongue clean and moist, sleeps well. The complaint was of twelve months' standing. One grain of calomel was ordered to be taken every night, and some mercurial frictions to the right hypochondrium. On the eighth day of this treatment, the mouth was affected, and the calomel was omitted. Having caught cold, a smart ophthalmia occurred, which required leeching, &c. Afterwards, as the swelling of the abdomen continued, the calomel was renewed, in two grain doses, and half a drachm of the spir. æth. nitr. was given twice a day. The belly became reduced in size—the urine more copious, but still coagulable by heat. In a short time afterwards, he was discharged, the abdomen being nearly reduced to its natural size, and the appetite good. The following extract from the observations appended to this case, we deem worthy of insertion.

"It is not easy to determine the nature of the hepatic tumour which was so very considerable in this boy. It was slow in its increase, and not attended with well marked symptoms of chronic inflammation of the liver. There was no tenderness on pressure, nor any pain or uneasiness in the right hypochondrium. There was no evident derangement of the biliary secretion, and his appetite, sleep, strength, and nutrition, were scarcely impaired. On the other hand, the œdema of the left leg, the commencing ascitis and tympanitis, the albuminous urine, accelerated pulse and increased thirst, all united to prove that the constitution had begun to suffer in consequence of the diseased state of the liver. The alterative doses of mercury, which were cautiously exhibited, were evidently productive of much benefit. The mixture with spirit of nitrous æther seemed useful in relieving the tympanitis. *In this, and many other cases, where considerable organic alteration had taken place in the liver, we have observed an apparently healthy secretion of the bile. Thus we have found bile of an healthy colour and consistence in the gall bladder, when the substance of the liver was tuberculated throughout. Naturally coloured al-*

vine discharges, therefore, furnish no proof that extensive organic disease of the liver does not exist."

"Concerning the albuminous state of the urine, we may remark, that it is no proof of an inflammatory condition of the constitution, it merely indicates considerable disorder of the function of assimilation. In health, a certain portion of animal matter is contained in the urine, in the form of that highly animalized substance, urea. This may be increased so much in quantity above the healthy standard as to constitute a disease. When the assimilative powers are more deranged, the animal matter of the urine ceases to assume the more highly animalized form of the urea, and is voided in the form of albumen, which contains much less nitrogen than urea. In a state of the system still further depraved, it passes off in the form of sugar, which contains no nitrogen, and is the least highly animalized. In diabetes, it is probable, that the urea is voided in increased quantity at first; as the disease proceeds the animal matter is voided in the shape of albumen, and afterwards of sugar. When diabetic patients are getting better, then the contrary seems to take place; and when the sugar diminishes the albumen increases or reappears, and afterwards is replaced by the more healthy secretion of urea. Dr. Prout was the first to establish the existence of these three different species, or rather stages of diabetes. In dropsy the appearance of albumen in the urine is a bad sign, as indicating a depraved assimilation and a source of debility. We have established, by numerous experiments, that when there is much albumen, there is scarcely any urea in the urine, and *vice versa*, or more generally that the proportion of urea is inversely as that of the albumen. How far the treatment suited to diabetes may be also applicable to cases of chronic dropsy with albuminous urine, and unattended by organic disease, experience alone can decide."

The passage which we have marked in italics, is that to which we wish to draw the attention of Dr. Bright, and the public. But the whole of the observations of our intelligent authors are deserving of notice.

From the Medico-Chirurgical Review.

PATHOLOGY OF FEVER. Drs. Graves and Stokes.

We believe that none, even of our continental brethren, have taken greater pains to investigate the causes, the seat and the consequences of fever, than the two physicians above named. Their sentiments, therefore, on the pathology of this wide spread disease must be interesting to the profession at large. These sentiments may be gathered from some observations appended to a case of fever (among many others) treated in the Meath Hospital.

"The epigastric tenderness, with nausea and vomiting, so common in this fever, seemed to be caused by inflammation of the mucous membrane of the stomach. In most of the fatal cases this was found of a dark red colour and very soft, a condition evidently produced by violent inflammation. In others the redness was not so extensive, dark, or continuous; although we acknowledge, that in the present fever the above symptoms, depending on inflammation of the stomach, are very frequent, yet we have seen some cases where there was no evidence of any local inflammation whatsoever; and in others again, have observed that some other organ, as the *brain* or *lungs*, was the seat of inflammation, while the stomach was free. We cannot subscribe therefore to the opinion, which supposes a local inflammation to be the root of all fevers, or to that which attributes their origin solely to inflammation of the mucous membrane of the stomach and alimentary canal. In our dissections we have in some cases found the brain inflamed, in more cases the lungs, and still more some part of the digestive organs. We do not recollect to have found in one instance, out of very numerous dissections, a fatal case of fever which did not exhibit some serious local lesion of an inflammatory nature; so that while we deny, from our observation of cases during life, that fever necessarily implies local inflammation, dissection has convinced us that the occurrence of local inflammation during fever, is the general cause of its fatal termination. Let us here observe that the latter inference is by no means contradictory of the former; for in the fatal cases, accurate observation always detected, *during life*, the seat of the inflammation; so that in those cases which terminated favourably, and where no such symptoms existed, our inference that no local inflammation had been present, receives additional strength from our post mortem examinations, for there we always found inflammation where we expected to find it; that is to say, we were always able to pronounce on its situation, so far as to tell, before the body was opened, *in which cavity the inflammation would be found.* The post mortem examinations have been always conducted by ourselves with the greatest care, and we generally spend between two and three hours in the examination of the body, being convinced that nothing has contributed to retard the advancement of medicine so much as superficial post mortem examinations. In examining the abdomen we first note the general appearances of the intestines, and then take out the whole intestinal tube, which we slit up with an *enterotome* at its mesenteric attachment; this is done in order to avoid dividing any of the follicular patches or ulcerations in the small intestines, which are always situated at some distance from the mesenteric attachment. During this process we examine the contents of the alimentary canal; and afterwards having first carefully washed the mucous membrane, we remark its appearance throughout its whole extent from the stomach to the rectum. The morbid anatomy of the brain, the lungs, and the intestinal canal, has, within these very few years, received so many important additions, so much light has been thrown on this subject by more accurate investigations, that we would hesitate much in

drawing any conclusions from the dissections of fever subjects recorded before this period. Indeed, we could prove that in most of even modern works on the pathology of fever, morbid appearances have been frequently mistaken, and more especially that many things, both in the brain, lungs, and alimentary canal, have been set down as morbid, which really are not so; consequently, conclusions, not at all justified by the state of the parts, have been drawn. Thus we hear of sanguineous congestion in the head, and morbid vascularity of the brain, intestines, &c. where the very accounts given contain internal evidence, that these supposed morbid appearances had either no claim to that appellation, or resulted from changes which took place immediately before or after death. In fact, we look upon the morbid anatomy of fever as a subject which requires to be investigated almost *de novo*. Our assertion, that we have hitherto found evident lesions of vital organs in all the fever subjects we have dissected, is, we are aware, opposed to the recorded experience of many authors, who relate numerous cases in which no morbid alteration of any consequence could be detected. We question, however, very much the accuracy of such dissections, for, as has been well observed by Rostan, nothing is easier than to find nothing. We doubt whether such persons have injured medical science more than those who have found too much."

We recommend the above careful mode of *post mortem* researches to the attention of our brethren in this country—especially those who have the superintendence of public institutions, and who, consequently, have less difficulty to contend with, than those in private pactice. We believe that very few cases of fever go on to a fatal termination, without the occurrence of organic changes—at least of inflammation in some of the great viscera. These may be the cause of death, but not of the fever.

From the London Medical Gazette.

CASE OF IMPERFORATE ANUS, WITH OPERATION. By A. Copland Hutchison, F.R.S.E., Surgeon to the Westminster General Dispensary, &c.

Mr. Editor,

Dr. Locock did me the honour to consult me, on the 20th of November last, in the case of a female infant, named Mary Scanler, born with imperforate anus; this being the sixth instance of the kind that has happened in my practice. The usual mark, or hollow, in the situation of the natural anus was most distinct. Upon making pressure over the abdomen with my hand, I could not discover any particular fulness or tension of the parts; and, therefore, profiting by past experience, I proposed to delay the operation until the following day, by which we would ensure a greater distention of the rectum with meconium, when the operation should be performed. The infant had vomited ever since its birth, and would not take the breast, so that it was necessarily fed with spoon meat.

On the 21st November, just sixty hours from its birth, I performed the operation, after the usual manner,* at the Westminster General Dispensary, in the presence of Messrs. Jennett, Davis, and Wade, besides some pupils; when, at the distance of an inch and a half from the surface, we had the satisfaction of penetrating the intestine with a trocar, through the canula of which a quantity of meconium instantly flowed. The canula was secured in its situation for the night, and the child was carried home.

The vomiting, which for twenty-four hours previous to the operation had become stercoraceous, now gradually ceased after the operation; the infant fed better, and continued for between three weeks and a month to thrive and grow; its motions were natural in colour, consistence, and quantity, during the whole of this period, and a tea spoonful of castor oil was administered only twice, more as a precautionary measure than as a matter of necessity.

From about the 14th of December, owing to some cause which we could not some time clearly understand, the child gradually lost flesh. Its motions, though natural, were scanty, and the artificial anus was easily permeable to a good sized bougie. In a few days we ascertained that the mother had placed the child out to be nursed by a person, who, it would seem, professed at the time to be suckling her own child, but which, a few days only before the child's death, was discovered not to be the case. The child died on the 28th of December, without evincing any symptoms of acute disease; and leaving an impression on my mind, that there had been gross neglect on the part of the nurse.

The next day I examined the cavities of the chest, abdomen, and pelvis, in the presence of the Messrs. Wade, when not any cause of death, or appearance of disease, could be traced. The parts concerned in the operation, with the whole contents of the pelvis, were carefully removed, and are now in the Museum of the College of Surgeons.

The whole of the viscera in this case were in their natural situation; the rectum turning up behind the uterus, and ending in a narrow cul de sac; the part cut into being at the bend where it approached nearest to the surface.

After the preparations had been macerated, and in spirits and water some days, the part cut through at the operation only measured one inch; half an inch, however, we must allow for absorption, and the natural approximation of the mucous membrane of the intestine to the surface, after a lapse of upwards of five weeks. The parts seemed healed, and in so far as the operation itself was concerned, it

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* See *Practical Observations in Surgery, &c.*; second edition, by A. Copland Hutchison.

had completely succeeded. The sphincter muscle appeared to be wanting.

In this case, as well as in my former, the excitement of titillation, amounting sometimes to rather a rough movement of the finger in the natural situation of the anus, both before the operation was commenced and afterwards, was our best guide in making the various incisions with the scalpel. Without this expedient, and the introduction of a director into the vagina, to guard us against wounding the parts in that direction, I am certain that this operation would not have been so successfully performed. I can now, therefore, with more confidence than ever, speak of the advantages to be derived from attention being paid to these suggestions. In this last case, indeed, I was chiefly directed in cutting as the bowel protruded downwards, and only used the knife as the protrusions occurred; so that, after the first incision, the best stimulus or excitement to protrusion, is the scalpel, followed by the surgeon's finger thrust into the bottom of the wound, and moved upwards and sideways as before directed. The operator, however, must be very much on the alert in watching the various protrusions or bearings down of the gut, for its retirement from the surface is much more rapid than its approach or protrusion downwards.

From the Medico-Chirurgical Review.

OPHTHALMIA PORRIGINOSA.

Under this term, Mr. Christian, consulting surgeon to the Liverpool Ophthalmic Infirmary, has treated of an affection which is usually denominated *scrofulous ophthalmia.* Mr. C. thinks himself authorized to give the disease this title, not only from its appearing in connexion with porrigo, but from its bearing certain features, sufficiently characteristic in themselves, to warrant such a distinction. The coincidence has been regarded as casual, and the ophthalmic disease treated on general principles. Not unfrequently, when the symptoms have run high, the porriginous eruption has been encouraged, with the hope of relieving the local affection. As Mr. Christian looks upon these two in the relation of cause and effect, he conceives that treatment of derivation, according to that principle, must be erroneous, if not injurious. The following description of the disease is worthy of record in this place.

"Porriginous ophthalmia is a disease of early life, affecting principally children, though sometimes seen in the adult subject. It is usually accompanied by an eruption of pustules on the face or head which go through the various stages of suppuration, ulceration, and desquamation: and if the eruption in its pustular form shall have disappeared before the inflammation of the eyes have commenced, still there will, almost always, be found some traces of the original disease, in the form either of scabs or fissures, situated behind the ears, at the commisures of the palpebræ, or at the junction of the alæ nasi with the cheeks. It is worthy of remark, that when the fissure or chap is situated between the lips, attended with excoriation of the nostrils, the upper lip often swells, assuming the appearance of what is vulgarly termed the scrofulous lip, which may be one cause of the disease being referred to this origin.

"Sooner or later, however, the ophthalmia commences, and the eye in a short time presents a highly vascular state of the conjunctival membrane. The inflammation appears in different degrees of intensity, in different parts of the albuginea; and the vessels, which are much enlarged, are seen to run in clusters, towards certain parts of the cornea, whilst this transparent tunic contiguous to these vessels is more or less clouded. On minute inspection, a pustule or vesicle will frequently be discovered at the apex of each of these fasciculi, or bundles of red vessels; but, very often, depressions will be found to exist, instead of raised pustules, situated at the margin of the cornea, or on the intermediate surface. On some occasions, the cornea will be perfectly transparent, and free from either pustule or ulcer, whilst the albuginea, with its vessels fully distended with blood, will present one or more yellowish spots, apparently elevated above the surrounding vascular superficies. These are so many ulcers, which by their extreme irritability keep up, if not give rise to, the inflammatory excitement in these parts. Similar ulcers are sometimes found on the lining membrane of the palpebræ. Wherever they are situated, they render the motions of the eyelids very painful; so that the eyes are generally kept fast closed, and their inspection, in consequence, becomes a matter of extreme difficulty. The sight being affected, only in proportion to the degree of opacity, and as this is but inconsiderable in some instances, the vision remains perfect; but the sight will necessarily be more or less impaired, according to the extent and density of the opacity of the cornea. Very often black spots may be observed arising from the attenuation of the cornea, occasioned by the ulcerative process, which sometimes perforates this tunic, and causes the incarceration of a portion of the iris. The discharge which issues from the eye, consists principally of tears, mixed more or less with a sanious fluid which discolours the linen applied to the parts, and is often considerable in quantity. Although the pain attendant upon this affection of the eyes is not very great, yet from the great irritability of these parts, the patient not only carefully shuns the light, but desires to lie with the face downwards, whilst the hands are almost unceasingly applied to the forehead."

The disease often assumes a chronic form, and lasts for months, leaving one or more opaque spots on the cornea, the consequence of effused lymph. The conjunctiva palpebralis also becomes changed in structure, and a morbid sensibility is generated, which is

very difficult of removal. In such cases the disease will continue long after its cause is removed, and then requires a specific treatment. The author next goes on to prove, or at least to support his doctrine, that the affection of the eye is an association with, or consequence of, the cutaneous eruption. For the arguments and observations on this head we must refer to the original paper. His principle being admitted, (and we do not see any just cause for denying it,) the indications of cure will hinge on the removal of the eruption, and the extinction of the ulcerative process.

"Whatever external appearance of active inflammation may exist, provided it be of the specific character, usually attendant on porrigo, and occurring in conjunction with pustules or ulcers of the globe, bleeding either locally or generally is seldom necessary; except, indeed, the inflammation shall have extended to the internal tunics of the eye characterized by pyrexia, severe pain of the eye, forehead, &c. Blistering, likewise, which constitutes so valuable a remedy where a derivative is required in these cases, is not only useless, but generally tends to aggravate the eruptive disease, and thereby proves an additional source of irritation. The cooling sedative lotions in such general use are for the most part unavailing here: the object kept in view in the treatment of this particular affection, being not so much the alleviation of pain and irritation, as the production of a new action, in parts already under the influence of a specific disease.

"Corresponding with these views, it has been found by experience, conducted upon rather an extensive scale, in a public institution, where a large proportion of the cases are of this class, that the mercurial applications constitute the best remedies. A weak solution of the oxymuriate of mercury, composed of one quarter of a grain to the ounce of water, forms a very useful application: or if there be much discharge from the eyelids, and especially if accompanied by excoriation of the parts around the eye, the mixture of calomel and lime water, known by the name of black wash, will be found to be one of the best local remedies. The unguentum hydrargyri nitratis mitius, or the unguentum hydrargyri præcipitati albi, affords an excellent dressing for the eruption, or ulcers about the face and ears, which require to be attended to; a small portion of the former, or the red precipitate ointment diluted, is to be introduced within the palpebræ at bed time.

"Previously, however, to the use of these latter means, a weak solution of the argentum nitratum, in the proportion of two grains to the ounce of distilled water, should be dropt on the surface of the globe, and this ought to be repeated every second day, as long as the ulcers continued.* It has already been remarked, that the morbid action has been kept up, in the fine textures of the eye by the presence of an ulcer, or fissure at the corner of the eyelids, which will be frequently observed to bleed, whenever the palpebræ are forcibly separated. These fissures must be touched, every second day, with a saturated solution of the nitrate of silver; and during the intermediate days, with the weak ointment of nitrate of mercury.

"The vascularity together with the irritability will generally disappear with the healing of the ulcers, a strong proof that the specific action of these vessels is overcome; but should a degree of morbid sensibility still remain, a collyrium consisting of four grains of the sulphate of zinc, to an equal number of ounces of water, combined with a drachm of the vinum opii, dropped into the eye, once or twice a day, will be found highly useful."

On the constitutional treatment, Dr. Willan's work will be consulted with advantage, and also the lectures of Mr. Lawrence, as published in the 10th volume of the Lancet.

From the Lancet.

LARGE POLYPUS, GROWING FROM THE WHOLE CIRCUMFERENCE OF THE OS UTERI.

[St. Bartholomew's Hospital.]

Sarah Lloyd, aged 41, a stout healthy looking woman, was admitted into the Hospital, March 12, 1828, under the care of Mr. Lawrence. Six months ago, she was delivered by the forceps of a still born, full sized child. During delivery, the accoucheur, who is an inteiligent practitioner in the country, observed for the first time a polypus in the vagini, so large that he at first mistook it for the head of the child.

The tumour has since gradually increased, being attended with a sensation of weight and bearing down, and with mucous discharge, sometimes mixed with blood. There has not been much pain, and the constitution has been but little affected. The catamenial discharge has ceased.

At the time of admission, a tumour nearly as large as a child's head, protruded from the vagina, into which it could be completely returned by moderate pressure. It was a firm and nearly insensible mass, of a somewhat pyriform shape, with a surface for the most part smooth, but at some points a little knotted, deep red, and plentifully bedewed with mucus. On passing the finger up the vagina, the neck of the tumour was felt as large as the wrist; its texture was firm, and the patient complain-

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* We are informed by Dr. Maule, of Marlborough, that "he has found a solution of the argentum nitrat. in the proportion of two grains to the ounce of distilled water, (dropt into the eye twice a day,) a safe, not painful, and very powerful remedy in inflammation of the conjunctiva."—*Extract from a letter to the Editor.*

ed of pain when it was pressed. In the recumbent position, the tumour remained in the vagina; but it protruded externally, and occasioned increased pain when the patient rose and walked about. There was copious discharge of thin mucus from the vagina; but no hemorrhage had ever taken place. The fæces and urine were voided with difficulty; the general health was not impaired. Mr. Lawrence requested Dr. Gooch to see the patient, and after the most careful examination, neither of these gentlemen could feel any portion of the os tincæ. They both concurred in opinion as to the propriety of removing the tumour by ligature.

The patient was ordered to confine herself to the horizontal posture, and the bowels were kept open by the occasional use of saline aperients. On the 25th of March, a strong silk ligature was passed around the root of the tumour, by means of a double canula, and drawn tightly; it caused a little pain, which increased towards the evening, when a dose of laudanum was given with relief. The ligature was drawn tight every day; it broke on the 28th, and was immediately replaced by a stronger one. The surface of the tumour assumed a dark livid, and then a black sloughy appearance, and produced a copious fœtid discharge. There was severe pain shooting up the loins, heat of skin, thirst, restlessness, furred tongue, and nausea. The hypogastric region and abdomen were free from pain and tenderness; the bowels, which were costive, were freely moved by the use of mild clysters, and the pain was much alleviated by small and repeated doses of Dover's powder. A lotion of the chloruret of soda applied to the tumour completely corrected the fœtor. On the seventh day after the application of the ligature, violent hemorrhage suddenly came on from the vagina, and a very large quantity of blood was lost, proving nearly fatal. Cold cloths were applied externally, and a solution of alum was thrown up the vagina. Brandy, wine, and ammonia, were freely administered, and the heat of body was restored. She continued in an extremely feeble state for about 48 hours; she then recovered considerably. The pain and sense of bearing down, which she likened to labour pains, continued; she was occasionally sick, and the bowels were moved with difficulty; there was, however, no tension, pain, or tenderness of the abdomen. The tumour grew more livid, and its surface presented an ash-coloured gangrenous aspect, its bulk was much reduced, and there was a considerable discharge from it.

On the third of April, Mr. Lawrence thought it adviseable to remove a portion of the tumour, but as he feared it was not completely deprived of its vitality, he first made a slight incision at its lower part; a quantity of dark coloured blood immediately flowed out, and confirmed his suspicions. Alum lotion was applied, and the bleeding soon stopped. The poor woman grew more feeble, and sank at last on the 8th of April, fifteen days after the application of the ligature.

Examination twenty hours after death.

On laying open the cavity of the abdomen, not the least evidence of peritoneal inflammation could be discovered. The symphysis pubis was divided, and the uterus and its appendages taken out. The uterus was of its natural size; its neck was elongated, and formed a continuous surface with the root of the tumour. Viewed externally no portion of the os tincæ could be discovered. The ulceration which had been produced by the ligature had not extended very deep through the dense substance composing the neck of the tumour. Through the peritoneum, which is reflected from the posterior surface of the uterus to the rectum, was a ragged opening, about an inch in length, and opposite to this, and in the back part of the uterus, was a small superficial ulceration. The surrounding peritoneum, and that lining the cavity of the pelvis, were healthy. The cavity of the uterus was found to communicate externally by a small opening at the inferior part of the tumour, and on making a perpendicular incision through the centre of the uterus and tumour, the root of the latter was found attached to the whole circumference of the os uteri, and completely incorporated with the cervix. The tumour consisted of a hard compact substance, intersected by membranous septa, presenting a whitish coloured aspect.

From the Edinburgh Medical and Surgical Journal.

OBSERVATIONS ON THE MORTALITY AND PHYSICAL MANAGEMENT OF CHILDREN. By John Roberton, Member of the Royal College of Surgeons, Edinburgh; one of the Surgeons to the Manchester Lying-in Infirmary, &c. 1827. 12mo.

The pursuit of medical statistics is in this country unhappily attended with many difficulties, and is too apt to lead to unsatisfactory or uncertain results. Our public mortality bills, which must form the basis of all general researches, and to which all special investigations must bear a reference, are, if not so inaccurate as generally represented, at all events miserably defective. For want of a few additional particulars, which it would have been easy to collect along with the rest, the attention of the statistical inquirer must be confined in a great measure to the general facts of the science, and it is exceedingly difficult, if not impossible, for him to pursue it into its remoter corners, and to make those more special researches, by which chiefly we are to discover where the public health is deficient, and how it may be improved.

It certainly reflects disgrace on Great Britain, and no little discredit on our Houses of Parliament, that matters are in this respect allowed to remain so long in the same state. Every succeeding year teaches us to lament that our ancestors were ignorant of the great objects to be attained by extending the mor-

tality bills. Yet with our eyes open we neglect the lesson, and seem disposed to revenge the loss we have sustained from our predecessors, by transmitting it to our successors unrepaired. The faint attempt at improvement in the statute of 1812 will hardly relieve the Legislature from the charge of indifference. We fear it deserves too truly the reproaches heaped upon it by Mr. Roberton. "The deviser of that act (says he) deserves little praise for his exertions. His plan is meagre and defective in the extreme. If the mode of parochial registration which had been so long followed required revisal, it should have been entered upon with full intelligence as to the nature of the task, and a sincere desire as far as possible to remedy every defect; qualifications of which no trace appears in the act in question." It is to be hoped, that amidst the extensive inquiries which are now making into various departments of the internal policy of the kingdom, this most important topic will not remain much longer unnoticed.

Meanwhile, by the activity of private individuals, and the public spirit of a few municipalities, the defects in the general system have been supplied for some local districts; and comprehensive tables have been kept, the examination of which has led to the discovery of some striking facts. These facts, however, are often lessened in value for want of comparative statements, and still more frequently for want of an analysis of their causes; —an inquiry, into which it is impossible to enter without tables of still greater comprehensiveness than any now existing.

Among the discoveries which have thus been brought to light, there is none more pleasing to the physician and the philanthropist than the almost inconceivable amelioration which the progress of physic and political improvement together have effected in the mortality of children. And we apprehend there are few discoveries in medical statistics which, when deeply examined, will lead to so many useful practical hints for directing us to farther advancement. This subject has engaged the attention of several writers, and in recent times particularly of Dr. Watt, Sir G. Blane, Mr. Mylne, and Dr. Casper. In Mr. Roberton's work it is handled in a very clear and satisfactory manner. His object is to arrive at an accurate numerical statement of the general fact, to trace it as far as possible to its causes, to correct certain errors committed by others in the latter investigation, to show how much our efforts at future improvement should have reference to the physical education of children, and to lay down the rules by which their physical education should be conducted. It consists, therefore, of two parts; in the former or statistical part, he treats of the mortality of children and its causes; in the latter, of their physical education as regards their health. In the former he shows that he possesses no small share of the talent of the statistical philosopher; in the latter his instructions are judicious, popular, and with a few trifling exceptions correct. We shall give a short analysis of his statistical inquiries. The practical part of his treatise is too concise to admit of abridgment.

After a few remarks on the nature of mortality bills, and the defects of those kept in Britain, he gives a number of local tables from various parts of the country, and proceeds to determine the relative mortality among children in different places. From this inquiry it results that the mortality is much greater in cities than in small towns, and still greater than in the country. The tables, however, by which he endeavours to establish the numerical relation between them, are not exactly adequate to the end in view. He makes it appear that from the tables of London, Liverpool, Glasgow, and Manchester, the deaths under ten years of age are, on an average of the whole cities, 51.39 per cent. of the total mortality;—that in small towns, such as Chester, Carlisle, Warrington, and Northampton, whose population varies from eight to twenty thousand, the average per centage is 46.97;—that in village parishes it is 45.9;—and that in agricultural parishes it is so low as 35.4. Two objections lie against these results. In the first place, the tables from which the data are taken were constructed at very different periods, some only a few years since, others so long ago as the middle of last century; between which periods it will presently be seen that a vast change has taken place in infantile mortality. And secondly, as the total mortality is much greater in some places than in others, it follows that the mode of counting by the ratio of the infantile to the total deaths, does not convey an accurate idea of the number of deaths during infancy, in proportion to the population. This objection has been foreseen by the author; and the following example he has given of a result corrected on account of it, is an excellent illustration of the magnitude of the errors which the ordinary way of computing relative mortalities may introduce. For thirty years after 1782, in every hundred deaths at Glasgow, 54.75 were under ten. For twenty years after 1746, in every hundred deaths in the parish of Ackworth, an agricultural parish in Yorkshire, 27.33 were under ten. Whence it would be natural at first sight to infer, that the mortality among children was twice as great in Glasgow as in the country districts of Yorkshire. But in reality this is not a correct account of the ratio; for the *general* mortality was much greater in Glasgow than in Yorkshire. The numerical facts we shall state in a manner somewhat different from our author. In Glasgow the deaths annually were one in every forty inhabitants, in Ackworth one in fifty-six. Hence in Glasgow, among every thousand inhabitants, there died annually 25, of which 54.75 per cent. or 13.7, were under ten; while in Ackworth, among every thousand inhabitants, there died annually 17.8, of whom 27.33 per cent. or 4.8 were under ten. *Consequently for every child that died in the latter place, in a given number of inhabitants, three died in Glasgow.* This is an appalling fact. Probably, indeed, the

places chosen afford extreme results. But unhappily we are not in possession of data for comparative bservations.

The next subject to which Mr. Roberton turns his attention is the causes of the great comparative mortality of children in towns over that in the country.

The causes he enumerates are those very obvious ones,—the foul air of crowded houses and apartments,—the consequent facility with which infectious diseases propagate themselves—poverty, and particularly in manufacturing towns, sudden alternations of ease and want—increased number of illegitimate births, the tendency of which to augment the mortality among children was very well shown in our account of the work of Dr. Casper. Another cause of which Mr. Roberton treats more specifically is the custom of the lower classes in towns of giving the youngest children pure spirits, an abominable practice, which in Manchester, it seems, the reluctant babes are gradually taught by making them in the first instance suck the finger dipped in the liquor. Another and a very important cause in the case of Manchester is the total want of vacant spaces throughout the town for public walks. It is to this cause that the author is disposed to assign the greater mortality among children in Manchester than in other towns of equal size, in which the general mortality is the same.

The next section treats of the improvement in infantile mortality which has taken place within the last forty or fifty years.

For proving this fact, and determining the improvement numerically, he has had recourse to the bills of London, Glasgow, Liverpool, Manchester, Warrington, Chester, Carlisle, and various country parishes in Lancashire and the adjoining counties. Few of these bills yield satisfactory results, as most of them are more or less defective. The following example, however, we shall select as being complete in all its parts, and made on a pretty extensive scale of years and population. In Warrington, a manufacturing town in Lancashire, of about thirteen thousand inhabitants, the average annual mortality for nine years subsequent to 1772 was one in 26.48, and of the deaths 55.12 per cent. were under ten: The average annual mortality for eight years after 1817 was one in 37.4, and of the deaths 44.65 were under ten. Consequently in every thousand inhabitants there died annually, of children under ten, 20.8 in the first period, and only 11.94 in the second. We shall presently find, from analogous data, that the improvement in Glasgow between the six years after 1782, and the six previous to 1812, was not much less, namely, from 20.3 to 13.58 in every thousand inhabitants.*

In the next section Mr. Roberton proceeds to rectify an oversight which has been committed by Dr. Watt of Glasgow in his well-known observations on the Mortality of Children. The subject of this section is one of very great importance.

Dr. Watt, as many of our readers must be aware, inferred from an examination of the Glasgow tables, that in that city the mortality among children had *not* improved between the two periods mentioned above; and that, as a manifest diminution had taken place by the abatement of small-pox, this improvement must have been compensated by a corresponding increase of deaths from other infantile diseases, more especially measles. In a late number of this Journal we have inserted a pointed contradiction of Watt's statements by Dr. Casper of Berlin. Dr. Casper found from the statistical tables of that metropolis, not only that the mortality among children was really and materially improved in the course of thirty years subsequent to 1790, but likewise that the decrease of deaths from small-pox did not account for the whole improvement; nay, that in proportion to the births there was an actual diminution in the number of deaths from measles. But Mr. Roberton has succeeded in contradicting the conclusions of Dr. Watt from the data which he himself has furnished. Dr. Watt's statement, as to the permanence of infantile mortality in Glasgow, was founded on the fact, that for six years subsequent to 1782 the deaths under ten years of age were 53.48 per cent. of the total deaths; while in the six years concluding with 1812 they were 55.43 per cent. Unfortunately, however, for the accuracy of his inference, Mr. Roberton shows that Dr. Watt did not take into account the great improvement which has taken place during the interval in the *total* mortality, and omitted to make the requisite correction, namely, by referring the infantile deaths to the population, instead of the general mortality. Let us now see what will be the result of that alteration. In the early period, the average annual mortality was one in 26.7, and of the deaths 53.48 per cent. were under ten: That is, among every thousand of the population there died annually 37.45, *of whom* 20.03 *were under ten.* In the latter period the annual mortality was one in 40.8, and of the deaths 55.43 per cent. were under ten. Hence in every thousand inhabitants 24.51 died annually, *of whom* 13.58 *were under ten.* So that in reality the deaths among children in a given number of inhabitants had decreased to two-thirds of what they were in the former period. We are not aware that this satisfactory correction has ever been made before.*

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* See Note *, next column.

* The mode of computation which refers the deaths in childhood to the population is much more correct than that which refers them to the general mortality. Nevertheless it is not quite exact. For when the mortality among children is improving in a greater proportion than the general mortality, which has for some time been the case every where, it follows that in recent times there must be a

We shall now, however, take a wider view of the section in which the foregoing criticism is contained, and which treats generally of the alleged reciprocity between the deaths from small-pox and those from measles, scarlatina, and other infantile diseases. The author has been led to bestow some pains on the subject, as in Manchester the statements of Dr. Watt and others have had a very pernicious effect on the advancement of vaccination. His account of the state of vaccination in that city is indeed deplorable. From May 1815 to May 1823, the annual number vaccinated at the Infirmary and Lying-in Charity was 3161. From May 1824 to May 1826, although the paupers who repaired to these establishments for other purposes were much increased, the annual number of children vaccinated has fallen to 1309.

We are enabled to place Dr. Watt's statement of the increase of measles in Glasgow in a clear and satisfactory point of view from a document, which we regret Mr. Roberton does not seem to have had it in his power to consult. The increase observed by Dr. Watt in thirty years subsequent to 1782 was a twelve-fold ratio; and even after making the proper correction on account of the error mentioned above, and referring the deaths to the population, there will remain an increase in the ratio of one to seven. This great rise does not correspond with the increase elsewhere: In London, for example, a much wider field of observation, the increase between 1791 and 1820 has been only in the proportion of two to five. We were therefore led to conjecture that the great apparent increase at Glasgow must have been owing to the extraordinary prevalence of epidemics towards the close of the period included in Dr. Watt's table. And accordingly this will appear pretty evident from the table itself; for while the annual average of deaths from measles for ten years before 1813 was 166, the numbers in three of the six years which form the last period of the table, were 267, 304, and 787. But farther, on referring to the valuable statistical account of Glasgow published in 1820 by Mr. Cleland, it will be found, that the ratio of deaths from measles to the total deaths,—which ratio had risen, during the thirty years comprised in Dr. Watt's table, from 0.8 per cent. to 9.09,—was for four years subsequent to 1812 (the last year in that table,) only 4.19; for the next three years 3.0; or for the whole seven years 3.69. On consulting the table below, which we have calculated from the data furnished by Mr. Cleland from Dr. Watt's investigations and his own inquiries, the reader will perceive, that while the yearly deaths from small-pox in Glasgow have decreased, during the forty years prior to 1820, from 63.2 in ten thousand inhabitants to 4.0, those from measles have increased from 3.0 to 7.9 only.* Dr. Watt's estimate of the great increase of measles is therefore distinctly vitiated by the prevalence of epidemics towards the close of the period to which his inquiries were necessarily confined.

But although the decrease of small-pox is thus even in Glasgow very far from being compensated by the increase of measles, there is no doubt that the latter disease in proportion to the population, although not more common, as appears from Dr. Casper's inquiries, at Berlin, is materially so since the diffusion of vaccination both in London and Glasgow, and probably in Britain at large. Returning now, however, to our author, he maintains, that the increase, such as it is, arises from nothing else, than, on the one hand, from a greater number of children, who

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greater proportion of infantile population in the same number of inhabitants than in more remote periods. Now it is properly to the infantile, not to the general population, that the infantile deaths should be referred. But it is by no means easy to ascertain, from present data, what the proportion of children in the population amounts to.

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* The subjoined table comprehends five periods of six years each, and one period of seven years. The numbers in the per centage department differ from those in Mr. Roberton's table. We have verified their accuracy, however.

From 1783 to	Deaths from		Of 100 deaths, were from		In 10,000 Inhabitants there died yearly of	
	All Diseases.	Small-Pox.	Measles.	Small-Pox.	Measles.	Small-Pox.	Measles.
1788,	11544	1955	93	16.90	0.80	63.2	3.0
1794,	14174	2135	130	15.06	0.92		
1800,	12950	1869	210	14.43	1.62	33.8	3.8
1806,	13584	892	403	6.56	2.97		
1812,	15801	522	1437	3.30	9.09	7.95	21.
1819,	22060	236	814	1.07	3.69	4. 0	7.9

used formerly to be carried off by small-pox, being now left to be affected by other infectious diseases; and, on the other hand, perhaps, from an increased fatality among the infected, which is owing, not, as some imagine, to the small-pox formerly cleansing and strengthening the constitution so as to enable it to resist future diseases, but simply to these diseases now finding a greater number of unsound constitutions to attack, which in former times were previously disposed of by the small-pox. And he denies altogether that any sound argument has ever been brought forward to prove, that the want of those mysterious changes, which are supposed to have been effected in the body by small-pox, does now either engender or leave undisturbed in any constitution a liability to be either more easily or more severely affected by measles and other disorders. On the contrary, "he is inclined to think," and we believe with great justice, "that the truth lies in an exactly opposite conclusion, and that one considerable cause of the decrease of mortality of late years in every part of the kingdom, is *the comparatively greater soundness of constitution enjoyed, since small-pox has given way.*"

In support of this opinion he mentions that consumption, which during last century had increased in a distressing ratio, appears to have begun to decrease at a date, after the general introduction of vaccination, corresponding with what would *a priori* be expected, considering the period of life at which the disease in question begins to prevail. This effect, if it has really taken place, cannot be expected to be yet very decided, because a sufficient time has not elapsed to bring a great number of the vaccinated to the age at which consumption is *most* prevalent. But still the improvement, judging from the London tables, is manifest, and certainly began about the period mentioned. At the close of last century the deaths from this disease had gradually increased during the previous hundred years from 15.4 to 26.3 per cent. of the total mortality. Between 1799 and 1808 they still continued to increase, being 27.8 per cent. But after that, namely down to 1808, they had decreased to 23.8; and between 1818 and 1825 to 22.2. As during the last thirty years there has been a great improvement in the general mortality in London, it is obvious, that, if the proper correction were made on this account, and the deaths from consumption taken in relation to the number of inhabitants, the improvement would be still more manifest. It is not easy to ascribe the decrease to an improvement in the political condition of the country, as many would be disposed to do; else why did consumption increase so much during last century?

The author might have farther illustrated his opinion, that the absence of small-pox does not render the constitution more liable to other diseases, by the fact, that the mortality above the age of ten from all diseases is lessened. We have already seen that the abatement of the mortality among children under ten is not nearly accounted for by the diminution of deaths from small-pox. It may now be added, that the improvement in the mortality under ten does not account for the improvement in the general mortality. Thus, taking the town of Warrington as an example: In the eight years subsequent to 1772, the total mortality was 37.7, and the infantile 20.8 in a thousand; while in the eight years previous to 1825, the total mortality was 27, and the infantile 12 in a thousand. Hence, for every thousand inhabitants, there died in the first period 16.9, in the second 15 above the age of ten; *being a diminution of nearly nine per cent. of such deaths.*

Let us now turn for a moment to the relative mortality among children of different ages, and to the relative change which has taken place among those of different ages in the course of the modern improvements in medicine and domestic life.

It is so well known that a vast proportion of the deaths among children occur during the first years of life, that it is unnecessary in this sketch to quote any of the fresh proofs to that effect which have been presented by Mr. Roberton. But it may be interesting to notice a few of the facts adduced by him to point out the very small mortality among children between five and fourteen. About the year 1780 the deaths between five and ten in Warrington, Chester, and Carlisle were, for every 10,000 inhabitants, only *fourteen and a third*, *thirteen*, and *twelve*, neglecting small fractions. In the Manchester Blue-coat Hospital, which contains eighty boys between six and fourteen years of age, there have died in twenty-six years only four, or one in 520 annually. In the Warrington Blue-coat School, among twenty-eight children, between eight and fourteen, none have died in twelve years. At the seminary for the children of the Society of Friends at Ackworth, containing 300 children between ten and fourteen, there have died in four years only three, being a mortality of one annually in 400.

To these statements it may be interesting to add some corresponding facts derived from the kindred institutions of this city. Heriot's Hospital is an institution for the maintenance and education of boys who are the children chiefly of the better class of operatives and lower class of shopkeepers. Certain chronic diseases disqualify for admission. The age of the children is from seven to fourteen. For the last seventeen years the average population has been 180, and the deaths have been thirteen, making an annual mortality of one in 235. Watson's Hospital is a similar institution for the children of deceased or decayed members of the Merchant Company, which consists of the superior class of shopkeepers and of merchants. From 1778 to 1811 the population was 55; from 1811 to 1820 it was 70; from 1820 to 1828 it has been 80. The deaths during these fifty years have been twenty-five; consequently the annual average

mortality is one in 123.4. The boys are from eight to fourteen years of age; and, as in Heriot's Hospital, certain chronic diseases disqualify. The nature of the Orphan Hospital needs no explanation. It contains boys and girls between the age of eight and fourteen. We have been unable to procure the particulars from which the estimate of the mortality is taken; but we have good authority for stating it during the eight years previous to 1823 so high as one in 37.5. The High School and Academy, the grammar schools of the city, are attended by boys from seven to fifteen years of age, who belong almost entirely to the middle ranks; and live with their parents or friends throughout the city. The population of the High School for the last six years has been on an average 680; that of the Academy since it was opened in October 1824 has been on an average 500. At the High School in six years *five* have died, being an annual mortality of one in 816: at the Academy in three years and-a-half *two* have died, being a proportion of one in 875. *The annual mortality of both institutions embracing a population of* 1180, *is only one out of* 833. These interesting facts are all derived from the most direct and authentic sources. It is evident that they would lead to much curious inquiry into the causes of the extraordinary difference of the mortality at different institutions.*

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* The very small mortality thus indicated among boys of the middle ranks of society in this city cannot be imputed to delicate children being educated at home, and consequently not included in the enumeration in the text. In point of fact, parents here, far from showing a propensity to pamper delicate children in their nurseries, generally send them to school with the rest; and it is consistent with the experience of our teachers, that their delicacy frequently wears off very soon under grammar school regimen. No species of physical education appears better calculated for ensuring health and hardiness. The boys have abundance of exercise of the most vigorous kind, and in all weathers; and at the same time they are constantly under the watchful eye of those most interested in their welfare.

The mortality in Watson's Hospital calls for one or two remarks. It is about double that of Heriot's Hospital, although the age of the boys, and general system of management, are as nearly as possible the same. But in fact, even this ratio is not the correct one. During the first ten years of the half century, namely the ten years after 1777, the mortality was one in 137.5; *and in the last ten years it has been one in* 71. May not this unfavourable ratio arise from the straitened circumstances of the parents previous to the admission of their children; and more particularly their sudden transition from ease and affluence to comparative poverty,—a transition which will of course be much greater, and much more severely felt in their case, than by those of the class from which the population of Heriot's Hospital is supplied? Will not the increased degree of this wretchedness among the middle ranks since the peace account for the increased mortality among their children? The greater part of the deaths have arisen from diseases depending on general unsoundness of constitution.

The enormous mortality of the Orphan Hospital should lead to a strict inquiry into the physical management of the children, and salubrity of the situation where the building stands. An inquiry, in fact, was instituted in 1823, but we have not been able to learn whether it ever led to any precise conclusions as to the causes of the mortality. The situation is low; and in a quarter where the fogs which in spring and autumn infest the city are always peculiarly dense, and frequent.

It appears that the improvement in the total mortality and in infantile mortality, which has been produced in the course of the last thirty or forty years, has not affected much the mortality among children of the denomination we are now considering. In some places, indeed, one would be apt to suppose from the tables at first sight, that there was an increased mortality among them. Thus we find by calculation from the tables of Dr. Watt for Glasgow, and of Mr. Roberton for Warrington, that in the former place the deaths among children between five and ten for every 10,000 inhabitants had risen betwixt 1783 and 1812, from 12.8 to 13.7; and in Warrington, betwixt 1773 and 1825, from 14.3 to 19.3. This apparent augmentation, however, will be accounted for in the case of Warrington, and more than accounted for in the case of Glasgow, when it is considered that a ratio to the population is not altogether a fair way of calculating in the present instance. In fact, in late years, in consequence of the improved mortality among children under five, the proportion of children between five and ten to the total population has been very much increased. It is not easy to make the proper correction on this account; but it is plain that it will completely compensate for the apparent increased mortality in Warrington, and alter the apparent increase at Glasgow to a substantial diminution. Still it cannot be questioned that the improvement between the two periods of life alluded to has been small, compared with what has been effected for earlier ages.

We come now to consider one of the most interesting sections in the work, that namely which treats of the relative mortality from different diseases at different periods of childhood. Few tables on this subject have hitherto been published, and none of these are both extensive and accurate. Mr. Roberton has added to the stock one taken from the Register at the Rusholmeroad cemetery in Manches-

ter. The register, he informs us, is kept with unusual care, and the part chosen by him extends through a period of four years after April 1821, including upwards of 2000 deaths under the age of ten. It would lead to too great details were we to examine this table with the fulness which would be required for discovering the results it yields. We must content ourselves with showing how it establishes one of the leading objects of the author's work, the importance of paying increased attention to the physical education of children. Of the 2056 deaths it appears that no fewer than 994 originate in diseases more or less directly connected with errors in physical education, and particularly in disorders of the bowels. "No facts," says our author, "can show more forcibly the importance which ought to be attached to the physical management of children. Upon it chiefly depends, under all circumstances, the healthy condition of the digestive organs; and when it is neglected or conducted in error, the foundation is laid for many definite as well as anomalous ailments."

There are two other subjects connected with the mortality of children which Mr. Roberton has investigated, the relative mortality of the sexes at different ages, and the relative mortality at different seasons of the year. Under both of these heads the reader will find some interesting discussion and information; but the conclusions at which he arrives are not very pointed.

The second part of the work treats of the physical education of children in regard to their health. This department of his subject is too concisely discussed to admit of a useful abridgment here. It consists of eleven sections,—1. On the structure, functions, and temperament of the body peculiar to infancy and childhood. 2. On the duties and qualifications of a wet nurse. 3. On the articles of aliment suitable for the early periods of life. 4. On the dieting of children in health and sickness. 5. On cleanliness, bathing, and the management of the skin. 6. On dress. 7. On air, temperature, and exposure. 8. On sleep. 9. On exercise and amusement. 10. On derangement of the alimentary canal, and on the management of the bowels. 11. On the hereditary transmission of peculiarities of structure, and the early management of such as are predisposed to particular diseases.

We have already observed that he appears to us to have given a very plain, judicious, and popular view of the physical management of children, avoiding equally the errors of those who attempt to ensure the health of infancy by hardening the body, and of those who think to accomplish the same thing by overnursing. Persons concerned in the physical education of children, parents, and others, will do well to consult our author's opinions and directions.

In the following particulars we cannot coincide with him. In the *first* place, he discards too absolutely wine and malt liquors as articles of diet for children. Given regularly they will certainly in general prove injurious; but their occasional use has never appeared to us hurtful. Perhaps they do little good, given now and then to healthy children; but in laying down precepts on their physical education it is of some moment not to insist on what is matter of indifference,—in particular not to raise the voice against common practices, which are neither hurtful nor beneficial. *Secondly*, Mr. Roberton is too indiscriminate in his abuse of foundling hospitals. Their utility or hurtfulness is assuredly relative: in this country they would undoubtedly prove injurious to morals; in some continental states it is to be feared that their abolition, without improving the morality, would greatly increase the misery of the lower orders. *Thirdly*, We do not exactly comprehend his instructions never to use coke or charcoal as fuel in nurseries. If he means that they ought never to be burnt in choffers and away from the chimney, the injunction is correct, and we believe called for. But that coke and charcoal should not be used at all as fuel, on account of "the celerity with which they yield carbonic acid," appears to us a vague statement. Wood and coal yield carbonic acid quite as quickly, besides other vapours also, such as sulphurous acid and empyreuma, which when diluted are fully more pernicious than diluted carbonic acid. *Lastly*, He is unnecessarily severe on the use of gas for lighting apartments. His reasons for condemning it are that, when unburnt, carburetted hydrogen escapes, which is very deleterious, as Sir H. Davy's experiments show; and that when burnt long in a close apartment, the air becomes very offensive. On this subject we can speak with confidence, having had some personal experience regarding it. We take it that no person would submit to breathe for any length of time an atmosphere sensibly impregnated with unconsumed gas; nor if he did, do we conceive that any obvious harm would result. It has never, so far as we have been able to learn, been remarked, that coal-miners suffer materially from breathing a dilute atmosphere of light carburetted hydrogen; gas-workmen, who constantly breathe a dilute atmosphere of the mixed carburetted hydrogen gases, do so with impunity; and we may add, that on the occasion of some experiments, conducted along with a scientific friend, we spent the greater part of our working hours for three months in an atmosphere which all strangers felt disagreeable, without being able to observe any impression whatever on the health. As to the emanations from the consumed gas, these depend on the care with which the gas is manufactured and burnt. But good gas, burnt with ordinary care, although it does yield a little sulphurous acid, we know from the experience of several of our friends here, is very far from being the source of any annoyance in a dwelling-house.

We must close this analysis abruptly with expressing our sincere recommendation of Mr. Roberton's work, and our expectation of seeing him ere long employ the talent he has shown for medical statistics on wider, more varied, and more definite materials.

From the London Medical Gazette.

SURGICAL OBSERVATIONS ON THE TREATMENT OF CHRONIC INFLAMMATION, *in various Structures, particularly as exemplified in Diseases of the Joints.* By JOHN SCOTT, Surgeon to the London Ophthalmic Infirmary, and Assistant Surgeon to the London Hospital.

Mr. Scott of Bromley has long had an extensive reputation as a successful practitioner in various local diseases, difficult of cure, among which the most important are the diseases of the joints. His success has been attributed, partly to a greater attention to local treatment than is common in modern surgery, and partly to the care and dexterity with which he has applied it with his own hands. On these subjects, however, none but vague accounts had hitherto gone abroad until the appearance of the present volume, written by his son, Mr. John Scott, who has had ample opportunities of becoming acquainted with his father's opinions and remedies, and who has fully adopted them in his own practice. We shall proceed to condense or extract those parts of the work in which its chief novelty and value consist. It commences with an endeavour to ascertain the state of the blood-vessels in chronic inflammation, the local remedies by which this state may be removed, and the various local diseases, which however different in form and seat essentially consist in chronic inflammation, and admit of being cured by the same local treatment.

This state Mr. Scott thinks essentially consists in a dilated and feeble state of the venous circulation, accompanied by increased arterial action; the result of which is, that the blood-vessels are unable to propel their contents. This is especially the case in the lower extremities, where the depending position of the part is constantly favouring the influx of blood into it, and constantly retarding the efflux of blood from it.

"The true pathology of chronic ulceration in the lower extremities appears to be this. The ulcer is only the termination and effect of the chronic inflammation by which it is surrounded, and the former cannot be healed until the latter is removed. In the treatment, the direct object is not to heal the ulcer, but to cure the chronic inflammation; for if this can be effected, the ulcer heals spontaneously. The essential remedy for this state of things is mechanical support, which restores to the vessels the power of propelling their fluid along their canals."

Mr. Scott differs from Mr. Baynton both in his mode of applying mechanical support, and in his explanation of its action. Mr. Baynton thought that the absorbents of the leg were rendered inactive by being separated from the arteries by effused fluid, and that this effusion depended on relaxation of the common integuments. Mr. Scott thinks that the effusion into the limb is the result of chronic inflammation, not of deficient absorption.

"If a patient with an ulcer on his leg be confined to bed, the pain, redness, and tenderness will rapidly subside, and the ulcer will heal, in many cases, speedily; but as soon as he begins to use the limb, the inflammation will return, and again terminate in ulceration. If, however, the limb be subjected to mechanical support, the inflammation will subside, and the ulcer will heal as quickly as, and often quicker than if he were confined to bed. All ulcers, not of a specific nature, which occur in the upper extremity or the trunk of a healthy person are healed with facility; yet the only difference between the parts there situated and those of the lower extremity is in the course of the venous circulation. It is clear therefore that the obstinacy of ulcers in the lower extremities depends on the obstruction to the venous circulation, and this is corroborated by the fact that the means by which this obstruction is obviated immediately get rid of the obstinacy of the disease.

Mechanical Support a Remedy for Chronic Inflammation.—"Mechanical support is a remedy equally well adapted to ulcers on the lower extremity, whether they arise from a varicose state of the veins or not. It is capable also of affording great relief in many cases of chronic inflammation not so violent as to produce ulceration. In the former cases, it is not the ulceration that is the object of our solicitude, but the inflammatory action, which induces ulceration. The ulceration ceases as soon as the inflammation is arrested; and as this has been shown to depend on distention of the veins, which are no longer able to resist the gravitation of the blood, we have only to afford such an uniform support to the limb, as shall prevent the veins from yielding to the pressure of their contents. If we adopt the adhesive bandage with this view, it must be applied in a manner very different from that in which it is recommended by Mr. Baynton. He directs the "middle of the piece of plaster to be applied to the sound part of the limb, opposite to the inferior part of the ulcer, so that the lower edge of the plaster may be placed about an inch below the lower edge of the sore, and the ends drawn over the ulcer with as much gradual extension as the patient can well bear. Other slips are to be secured in the same way, each above and in contact with the other, until the whole surface of the sore and the limb are completely covered, at least one inch below, and two or three above, the diseased part.'—'The force with which the ends are drawn over the limb must be gradually increased, and when the parts are restored to their natural ease and sensibility, which will soon happen, as much may be applied as the calico will bear, or the surgeon can exert.'

"I could relate many instances in which this mode of applying the plaster bandage has been attended by great mischief. The pressure round the part of the leg encircled by the plaster and bandage is so much greater than at the lower part, where a roller only is

applied, that the venous circulation is so much impeded, as to cause considerable tumefaction of the foot and ankle. This produces extensive inflammation, which is propagated to the original seat of disease. Besides, in many instances, the inflammation of an ulcerated leg extends much more than an inch below the ulcer; so that, according to Mr. Baynton's directions, we are to apply to a portion only of the disease a remedy which, when so applied, aggravates the remainder; for I repeat that inflammation is the disease and ulceration only its consequence.

"Instead therefore of commencing the application of plasters an inch below the ulcer, it is necessary to afford equal support to the whole limb, in order effectually to bring about a uniform state of the circulation. The difference between using the adhesive bandage with this view, and with that of squeezing the parts that are swollen into their natural dimensions, will be obvious to every one. By applying the plasters to the whole limb in the manner I am about to describe, we at one relieve congestion, and the attendant inflammation. The pain subsides, the lymph and serum are secreted in a less abundant quantity, and absorption going on, the limb is less swelled on the following day. In this manner it is gradually reduced to its original size and figure.

"With regard to the method of fulfilling the foregoing indication, the emplastrum plumbi, P. L., spread on calico, is the best application, as it does not irritate the skin. It is most conveniently made use of when cut into slips of fifteen inches in length by two in breadth. The foot being placed at a right angle to the leg, one of the slips should be applied from the first bone of the great toe, along the inner edge of the foot, around the posterior part of the os calcis to the first bone of the little toe; the middle of another slip should then be placed under the bottom of the os calcis, and its ends extended perpendicularly up on each side of the leg; the third is to be applied along the foot, parallel to the first, and overlapping the half of it; the fourth should be placed parallel to the second, overlapping the half of it, and extending perpendicularly up the sides of the leg. In this manner they should be applied alternately along the foot and up the leg, the one holding and, as it were, antagonizing the other in the motions of the foot until the whole limb is covered from the toes to the knee. Subsequently to this a calico bandage is applied in the usual manner, first alternately around the foot and ankle, and then up the leg as high as the knee. It is necessary to be particularly careful that the plasters and bandage be applied in such a manner that their superior and inferior edges are accurately placed in apposition to the skin, otherwise they will exert an unequal pressure, which is highly injurious. The whole should be applied with only that degree of tightness which is perfectly agreeable to the feelings of the patient, and not with a view of compressing the parts into a smaller space. In this manner every vessel in the limb will be uniformly and effectually supported.

"In respect to the time at which it will be necessary to renew the applications, that must be regulated by the quantity of the discharge; for when applied in the manner that has been described, they will remain for weeks, or even for months, without altering their position in the least.

"By adopting this mode of treatment, an ulcer on the lower extremity is placed precisely under the same circumstances in respect to the circulation, as one that has its seat on the trunk, or on the upper extremity; and will heal with equal facility."

Mercury locally applied, a Remedy for Chronic Inflammation.—"It is now universally acknowledged that mercury has the power of subduing inflammation; that when the whole vascular system is placed under the influence of this remedy, inflammatory action subsides.

"Mercury, however, when locally applied, has the same power of subduing chronic inflammation as when internally administered, and this without producing its constitutional effect; hence we may get all the benefit without any injurious effect. Whether mercury employed in this way really possesses the power I attribute to it is a question of fact which can be determined only by experience; but it appears to me that there is ample proof of the correctness of this opinion, and I will relate a few of the cases which have seemed to me decisive of the question."

Here follow many very interesting cases, showing the power of mercury locally applied in diseases of the bones, testicles, eye, and breast.

"It appears to me that the foregoing cases, which are only a small part of those which I could produce, are amply sufficient to prove, that, when chronic inflammation is going on in any texture, or in any part of the body to which local remedies are applicable, the local treatment, so far from being of the least, is of the greatest importance, and that the most effectual remedies of this kind are, mechanical support, and the local application of mercury.

"I now proceeed to consider the employment of these remedies in a formidable class of affections,—namely, the diseases of the joints.

"The term white swelling was once indiscriminately applied to most of the chronic enlargements of the joints. It is now well known, that, however similar they become in their latter stages, the disease originates in different structures. But it is often impossible to distinguish, from the appearance presented at an advanced stage of these diseases, which structure was primarily affected; and the diagnosis chiefly depends on what information we can collect about the previous symptoms and progress of the complaint. This want of distinction, however, is of less practical moment than might have been supposed; the disease, although modified by the structure in which

it is seated, essentially consists in chronic inflammation, and its consequences. Hence the same principle must regulate our treatment in each form of these diseases; the practical object is to proportion the activity of the treatment to that of the disease, and this will be indicated by the urgency of the symptoms, in whichever structure disease is going on."

We pass over the account of the progress of disease, according as it begins in the synovial membrane, the cartilages, and the cancellous structure: also, the progress of disease, according as it attacks the knee or the hip joint; because, although the account is ably executed, and obviously depicted from nature, it contains little novelty to those who are intimately acquainted with Mr. Brodie's standard work on this subject. We likewise pass over, in the treatment of the disease, that part which relates to the constitutional treatment. After minute and full directions about the management of active purgatives, or alteratives, and aperients, according to the active or chronic state of the disease; tonics, alkalies, diet, rest, or exercise on crutches, according to the state of the disease; warm baths, dress, residence in the country, or at the sea side; Mr. Scott proceeds to describe the local treatment which, first in the hands of his father, and now in his own, has been applied so successfully in the chronic states of the diseases of the joints. All active inflammation being subdued by strict rest, local bleeding, and poultices, not cold lotions, to which Mr. Scott decidedly objects: he proceeds as follows:—

Method of dressing Chronic Diseases of the Joints.—"The above mentioned irritating, and sometimes very mischievous remedies, (blisters, setons, issues, moxa,) may be all superseded by the following treatment. In the first place, the surface of the joint, suppose the knee, is to be carefully cleansed by a sponge, soft brown soap, and warm water, and then thoroughly dried; next, this surface is to be rubbed by a sponge soaked in camphorated spirit of wine, and this is continued a minute or two, until it begins to feel warm, smarts somewhat, and looks red. It is now covered with a soft cerate made with equal parts of the ceratum saponis and the unguentum hydrargyri fortius cum camphorâ. This is thickly spread on large square pieces of lint, and applied entirely around the joint, extending for at least six inches, above and below the point at which the condyles of the femur are opposed to the head of the tibia; over this, to the same extent, the limb is to be uniformly supported by strips of calico, spread with the emplastrum plumbi of the London Pharmacopœia. These strips are about one inch and a half broad, and vary in length; some are fifteen inches, others a foot, others half these two lengths, and the shorter or longer are selected according to the size of the part round which they are to be applied. This is the only difficult part of the process. This adhesive bandage ought to be so applied as to preclude the motion of the joint, prevent the feeble coats of the blood-vessels from being distended by the gravitation of their contents in the erect posture, and thereby promote their contraction. Over this adhesive bandage, thus applied, comes an additional covering of emplastrum saponis, spread on thick leather, and cut into four broad pieces, one for the front, the other for the back, the two others for the sides of the joint. Lastly, the whole is secured by means of a calico bandage, which is put on very gently, and rather for the purpose of securing the plaster, and giving greater thickness and security to the whole, than for the purpose of compressing the joint. This is an important point, as otherwise an application which almost invariably affords security and ease, may occasion pain, with all its attendant mischief.

"In some cases, in which the skin is thick and indolent, sufficient irritation will scarcely be excited by the above applications, and this may be promoted by rubbing on a small quantity of tartar-emetic ointment previously to the application of the cerate. This, however, is rarely necessary.

"In some cases, also, it is desirable more effectually to prevent the motion of the limb, particularly in children. This may be done, by applying on each side of the joint, externally to the plasters, a piece of pasteboard, softened by soaking in water, and cut into the length, breadth, and form of splints. These being soft, will accomodate themselves to the figure of the joint, and, when dry, effectually preclude all motion.

"The remedies thus applied will not require very frequent removal. The time during which they may be left undisturbed, will depend chiefly on the necessity for a repetition of the bleeding, in which we must be guided by the degree of pain, or when there are open abscesses, by the quantity of the discharge. Should neither of these influence the question, the only necessity for removing the dressings will arise from their having ceased to keep up any irritation in the skin. In some cases it will be necessary to reapply them every week; in the generality of instances, they may be allowed to remain a fortnight, and in others for a longer time. Even where there are open wounds, I allow them to remain several days, or a week, being firmly convinced by experience that the presence of the matter does less harm than the frequent disturbance of the part. A strumous ulcer can scarcely be disturbed too seldom; nothing does so much harm as officious dressing and probing.

"Consider the condition of a joint thus done up. First, it is thickly encased in emplastrum plumbi, leather and calico, by which perfect rest is ensured, and it is so supported and secured from external injury, as no longer to be a source of perpetual anxiety to the patient. It is a striking sight to see a child, who, before the application of these dressings, was in constant fear of being touched and moved, this fear keeping him in a perpetual state of nervous irritation, immediately after their ap-

plication losing all fear about his joint, and permitting himself to be touched and carried with perfect tranquillity of mind. This circumstance alone cuts off a constant source of irritation to the constitution.

"Besides this, the moderate, uniform, extended support which the plaster-bandage affords, is the best remedy for the vessels, weakened by long disease, and in that state which constitutes chronic inflammation. Of this, the best proof I can offer is the great efficacy of this bandage in old ulcers of the lower extremities, which are kept from healing by a chronic inflammation of the integuments, and which heal on curing this chronic inflammation by mechanical support. Let it never be forgotten, however, that this remedy is inadmissible, as long as active inflammation exists in the joint, which it is sure to aggravate, and that, in applying it, it is of the utmost importance to distinguish between a moderate and uniform support, which affords the full benefit I have been describing, and violent unequal compression, which, by impeding the circulation, is sure to aggravate the disease. There is only one rule that can be a safe guide in this respect—to apply the plaster-bandage in such a way as shall afford ease and comfort to the patient. If it occasions pain, either on its first application or subsequently, it is either applied badly, or the part is not in a fit state for it. So much for the mechanical mode in which this method of treatment operates.

"Next, it is a powerful means of exciting the vessels on the surface, and by that means of determining the blood from within. The skin is rubbed with camphorated spirit until it is red, and smarts; it is constantly under the influence of an ointment strongly impregnated with camphor, and, by being enveloped in an impervious covering, the perspiration of the part is confined, so as to keep it constantly in a steam bath. In these ways the action of the vessels of the skin is greatly promoted, as is evident by the surface being no longer pale, and commonly becoming covered with a crop of slight pustules or vesicles.

"Lastly, this surface, thus kept in a constant state of augmented action, is exposed to the influence of a powerful mercurial preparation. That mercury is one of the most powerful means we possess for controlling the action of the capillary vessels, removing congestion, and subduing inflammation, has been so fully proved of late years, more especially in inflammation of the iris, that it would be superfluous to attempt to prove it. In these cases, the whole system must be subjected to the influence of the remedy, in order to control the disease of a part. In diseased joints, however, the debility and irritability of the constitution are so considerable, that if mercury be given so as to affect the system, it invariably aggravates the disease. The only question, therefore, is whether it exerts the same power when applied locally, without affecting the constitution. I am aware that the prevalent notions about the way in which mercury operates are unfavourable to a belief in its local operation. But if mercury did not possess a power when locally applied, why is it ever employed as a local remedy? What shall we say to the many instances in which enlarged glands and other tumours waste and disappear under mercurial plasters? When mercury is introduced into the system by friction of the skin, must it not pass through the vessels of the part before it can reach the system? and how can it pass through these vessels without acting upon them? To deny it, would be to contend, that it did not act upon the part until the whole constitution became impregnated with the remedy, and, as it were, reflected its action again on the part from which it was received; a proposition which implies a much more minute knowledge of the way in which the remedy operates than any man in the profession possesses. I trust, however, that what I have already stated is conclusive on this subject; but, at all events, I am certain that the other remedies are not nearly so efficacious if the mercurial ointment be omitted.

"The remedies I have just detailed may be employed for any length of time, and over any extent of surface that may be necessary, without irritating the constitution, or producing salivation. They also admit of being varied and modified in as great a degree as the disease varies or is modified by them; they are consequently adapted to disease commencing in any of the structures of which a joint is composed, as well as to the various stages in which it may be found."

Notwithstanding the copiousness of these extracts, our limits prevent us from giving an adequate account of all the practical matter contained in this volume. We must, therefore, refer our readers to the book itself. It is written in a plain, clear style, and altogether in a way very creditable to the talents and professional acquirements of the author, but its principal value depends on the mode of treatment recommended, and this can be determined only by time. It has already been adopted by Mr. Hodgson of Birmingham, at present only in diseases of the elbow-joint, and to use his own words, "with very great success."

From the Nouvelle Bibliotheque Medicale.

CASE OF INTERMITTENT AURICULO-FACIAL NEURALGIA, *successfully treated by the Sulphate of Quinine, employed in the Endermic Method;* by M. Caucanas.

Madame C———, æt. 30, of a lymphatico-nervous temperament, and enjoying habitual good health, was attacked after exposure on the sixth of April, 1827, with an acute and lacerating pain in the left ear. The following day, it increased in severity, and towards evening became so excruciating as to be almost insupportable. Frictions behind the ear with equal parts of ether and laudanum were directed, and a mixture consisting of Hoffmann's anodyne and laudanum was exhi-

bited. The latter succeeded in mitigating the pain, and the patient passed a tranquil night.

The next day the pain re-appeared, and involved almost the whole left side of the face. Fifteen leeches were directed to the mastoid apophysis, followed by the application of an emollient cataplasm. The symptoms were somewhat relieved by these measures, but re-acquired towards evening all their former intensity. Three spoonfuls of a mixture, composed of four ounces of lettuce water, twenty drops of laudanum, and an ounce of the syrup of diacodium were given, with the effect of terminating the paroxysm. Some slight degree of pain was felt on the morrow, for which twenty leeches were directed to the angle of the jaw, cataplasms, &c. The paroxysm returned in the evening, but with little diminished severity; the mixture above mentioned was exhibited, with the same good effects as before.

10th.—Anorexia. The pain was scarcely perceptible during the day, but the paroxysm returned at its usual hour, and was treated as before.

11th.—There being no improvement in the condition of the patient, it was decided to make trial of the carbonate of iron, which had appeared to M. Caucanus to have been productive of advantage in an analogous case, and two doses, of a scruple each, were accordingly exhibited; the paroxysm was less severe than before, but scarcely had it subsidere it was re-excited, in consequence of fright, with greater violence than ever. The anodyne mixture above mentioned, was prescribed with its usual good effects. A scruple of the carbonate was given on the morning of the twelfth, but nausea and vomiting supervening, it was speedily rejected. The paroxysm recurred in the evening, and yielded to the ordinary treatment. A blister was applied to the arm. The carbonate was subsequently exhibited in the form of pills, but with the same result as before; inducing nausea and vomiting, which did not cease till they were expelled from the stomach. The paroxysm made its appearance three hours earlier, and with such violence as to occasion violent convulsions, loss of consciousness, &c. An antispasmodic mixture had some effect in abating the convulsions, but the neuralgic pains continued till one o'clock of the following morning, notwithstanding the frequent repetition of the anodyne. The patient stated that it appeared as if some one were tearing the flesh from the upper part of the chest, from the neck, jaw, cheek and eye, with pincers. Her nervous agitation was extreme.

The well marked periodical character of the disease, induced a recurrence to the quinine, but as it could not be administered internally, by reason of the great gastric irritability, it was decided to employ it according to the endermic method, and ten grains of the sulphate were applied to the dressings covering the blistered surface. The paroxysm did not recur; a sensation of numbness was felt in the diseased parts, and the blister appeared slightly inflamed. The sulphate was re-applied during three successive days, gradually diminishing the quantity, and the health of the patient was speedily re-established.

The preceding case evinces the powerful effects of the sulphate of quinine in intermittent neuralgias, and the advantages of the endermic method, in cases were it cannot be administered internally.

Commenting upon the above, Dr. Bouchenel supposes that it was rather a case of inflammation of the auriculo-facial ramifications of the portio dura, than neuralgia, properly so called. The following are the symptoms which he regards as characteristic of the former; the pain is more continued, never subsiding entirely, and subject to exacerbations more or less regular; the course of the nerve is painful upon pressure, and the sensibility of the neighbouring parts is augmented; occasionally the skin is redder than natural, and the motions of the jaw in mastication, &c. are painful. The duration of inflammation also, is much shorter, when it does not pass into a chronic state. Blood both generally and locally detracted is almost always followed by relief; revulsives are very useful in both cases, but in inflammation, instead of effecting a momentary alleviation, as in neuralgia, they ordinarily complete the cure.

From the London Medical Repository and Review.

A PRACTICAL AND PATHOLOGICAL INQUIRY INTO THE SOURCES AND EFFECTS OF DERANGEMENTS OF THE DIGESTIVE ORGANS, *embracing Dejection, and some other affections of the Mind.* By William Cooke, Member of the Royal College of Surgeons, &c. London, T. and G. Underwood.

Since the digestive organs have been discovered to bear one relation to the rest of the system, scarcely any disease to which mankind are subject, has not been attributed by one author or another to derangement of some part, or the whole, of this apparatus. By one class, the liver is considered a most vile organ, answering scarcely any other purpose in the animal economy than that of nourishing disease and of propagating it to the brain and all other vitial parts; the stomach is held by another class to be the nidus in which all human maladies are generated and nurtured. This voracious creature is always ready, with open mouth, to take in every thing poisonous and deadly, whereas it rejects with disdain, those simple and kindly substances which were so congenial to its nature in days of yore. As for the mucous membrane of this organ and of the intestines, we should do much better without it; for is it not the seat of typhus fever, of asthma, of diabetes, of hydrophobia, of smallpox, and of many deadly maladies? Nay, every branch of the tree of nosology may be traced to this morbific root; whose thirst for the vital fluid can be only exceeded by the energy with which the doctor drains this fluid through another channel; and during this

mighty conflict the poor system is obliged to stand, or (as it generally does) fall by itself. If, as we find in a work just published, the whole of this intricate machinery, so liable to derangement, have no other office to perform than that of manufacturing *electricity* to supply the *soul* with *food*, it would be better at once to let it fall to rest, and to furnish ourselves with portable electrifying machines, in order to give the soul a dose through some other channel, as often as she shall want it.

Those who fancy that they can trace every malady to the digestive organs, should try whether they cannot trace the disorder of these organs, also, sometimes to affections of other seats. For our own part we can find no difficulty in doing so, and they would probably find as little if they took the trouble of examining both sides of the question. But the greatest obstacle in their way consists in their laying it down as a maxim that the digestive organs are invariably the seat of disease, instead of proposing to themselves the question, whether or not they be so? That these organs often neglect their duty, or perform it in an improper manner, will be readily admitted, but why they alone should always be accused of guilt, requires some further proof to convince us that they deserve it than we have already had offered us. Do we find the functions of digestion deranged much oftener than those of the skin, kidneys, mucous membrane of the bronchia, &c.? Can the priority of derangement be always traced to the former? How happens it in compound fracture, in concussion of the brain, in common catarrh, and several other affections, where the digestive apparatus *cannot*, according to our present anatomical and physiological knowledge, generate the malady? John Hunter says in the motto which Mr. Cooke has selected for his work, "the stomach sympathizes with every part of an animal, and every part sympathizes with the stomach." But some of Hunter's disciples would say, "the stomach sympathizes with *no* part of an animal, *but every part* sympathizes with the stomach." Mr. Cooke, we are glad to find, adheres to his motto, and traces the connexion between diseases of the digestive organs and those of other seats, without referring the source of the effects to the former organs alone.

The work is divided into two parts, in the first of which the author inquires into the various sources of dyspeptic symptoms; and in the second he treats of the effects produced on remote parts of the body and on the mind by derangements of the digestive organs. He sets out with affections of the mucous membrane. In persons who have died of other diseases, after a long continuance of dyspepsia, he has often found the mucous glands enlarged, but more frequently in a state of vascular plethora. This affection may be usually distinguished by attentive inquiry into the history of the disease, and by a careful investigation of the patient's sufferings. He justly considers that an erythematous condition of the mucous membrane of the intestines, not only deranges the digestive functions by its direct influence, but that it also exerts an influence on other organs, particularly the liver, whose functions are essential to the formation of chyle. It will excite this viscus into excessive and unhealthy secretion of bile, from which erythism of the whole canal might ensue. This erythematous state of the mucous membrane frequently gives rise to troublesome diarrhœa, or diarrhœa alternating with constipation, and generally requires astringent and aromatic remedies, after moderate local bleeding.

The next subject is pyrosis, which Mr. Cooke considers to depend upon a morbid state of the mucous glands of the stomach. The quantity of watery fluid secreted by the stomach in this affection is sometimes very considerable. The author mentions the case of Morgagni, who, after swallowing a small leaf, had pain at the stomach and sickness, and he discharged sixteen pints of fluid in twenty-four hours. The fluid discharged is generally acid, so much so at times, as to set the teeth on edge. Mr. Cooke generally relies on astringents, such as alum and kino, combined with opium, in this disease; carefully regulating both the quality and quantity of the ingesta.

In speaking of hemorrhage from the alimentary canal, the author notices that it may arise from rupture of a blood vessel, from ulceration, from irritative action, or from a passive oozing from the the turgid villi, pervading often a considerable part of the canal, which may retain after death a dark red colour. We have an interesting case related, where bleeding to a very great extent took place in the stomach, from a mere hemorrhagic action of a small spot of the villous coat. The subject of this case was a young lady, fourteen years of age, who had been a frequent sufferer from bilious and dyspeptic symptoms, through the whole of her life. Her catamenia had appeared, and she had been much better in health for some months before she was attacked with vomiting of blood. She continued for several days to bring up a large quantity, which reduced her strength very considerably. She, however, gradually recovered from this attack, but after a year had elapsed, she had a recurrence of the complaint, of which she died, after vomiting up blood in large quantities, for five or six days.

"As this young lady had discharged at least ten pints of blood within the month, it became an object of great interest to ascertain the source, and the family cheerfully complied with my request.

"On the 9th I examined the body. On opening the abdomen the omentum presented itself in its natural position, covered with a yellowish fat. The intestines were distended, and looked black in some places, as if from dark matter contained in them.

"The liver was considerably enlarged, extending to the left hypochondrium. It was of a reddish colour, and scirrhous throughout. The gall-bladder was distended with bile of a nearly black colour, but which on being dilut-

ed, became yellowish green—showing that its colour was not from blood. The coats of this viscus were thickened. The spleen was enlarged to double its ordinary bulk, having the appearance and solidity of healthy liver, and containing but little blood. When the stomach was cut into, the mucous coat appeared healthy, except near the cardiac orifice. Here there was a spot of redness which presented the appearance of inflammation surrounded with a radius of turgid vessels and ecchymosis, extending about two inches. Though this evidently was the spot from which hæmorrhage had taken place, yet no abrasion was discoverable. The blood had flowed from a mere point, but hæmorrhagic action had been set up in the circumjacent vessels, just as we often see it from a leech bite. There were numerous petechiæ within the œsophagus. The duodenum contained some thick yellowish matter. In the jejunum and ileum there was a large quantity of black morbid matter, which in some places was distinctly mixed with blood, and resembled currant jelly. Within the colon we found some black fæces, and the mucous coat was of a deep red colour—not from turgescence of vessels, but from effusion into the subjacent cellular tissue.

"There was a considerable quantity of fat deposited about the kidneys, and these organs themselves were rather large. The pelvis of the left contained some puriform fluid, and there was a large quantity of mucus in the bladder.

"The veins of the mesentery were so distended by coagulated blood as to give them an appearance of vessels filled with a black injection.

"There was a small quantity of serous deposition in the cavities of the thorax and pericardium, and also in the substance of the lungs."

Aphtha is a disease considered of little consequence by nurses, and often so even by medical attendants. But it undoubtedly deserves more particular attention than it generally receives. The aphthous eruption in the mouth is a part of its character which requires the least notice. Our attention should be more particularly directed, and our remedies applied to the mucous lining of the alimentary tube, which is, perhaps, always more or less affected in this complaint. The following case will show the morbid condition in which the mucous membrane is frequently found after death produced by aphtha:—

"Mrs. H——, the mother of several fine and healthy children, was confined on the 7th of December, 1826. The infant appeared perfectly healthy, like all the former children. About a fortnight after its birth, aphthæ were observed in the mouth, and the excretions were unhealthy. The nurse used some armenian bole, but a week afterwards the bowels became so much disordered that I was consulted. Some cretaceous and astringent medicine, with an occasional dose of rhubarb, was first recommended. At this time the infant lived almost exclusively on the mother, who had plenty of milk, but her nipples were extremely sore. Sickness of the most distressing kind supervened, and the little sufferer ejected every thing taken into the stomach, and consequently daily sunk. The woman who had the charge of the mother and infant was making her *debut* as a monthly nurse, and was not very expert or judicious in the management. The mouth became covered with a thick white sordes, extending over the palate and lining the cheeks and fauces. On its being wiped off by means of a soft mop the part appeared raw. Some difficulty of deglutition arose from the accumulation of this matter in the fauces, where it resembled curd. I observed, too, that whenever put to the breast the mother shrunk from it on account of the pain it occasioned, and this, I apprehend, connected with her anxiety, had been detrimental to the infant from the first. Occasionally there was a tinge of yellowness on the skin. The urine was high coloured, and the stools green and fœtid. The child lingered on till the 22d of January.

Examination.—The mouth was not so thickly beset with aphthous eruption as it had been. There was no appearance of disease in the course of the œsophagus except near the cardiac orifice of the stomach, where the vessels were turgid; and the mucous glands were universally developed.

"The mucous coat of the stomach was slightly inflamed in patches. Parts of the jejunum and ileum exhibited the appearance of a turgid state of vessels, conjoined with glandular swelling; but at the termination of the ileum, and through the whole of the colon, the mucous membrane was of a deep red colour. The muciparous glands were much enlarged, and in some points slight abrasion had taken place. There were fæces in the colon.

"The liver presented rather the appearance of congestion, but the colour of this viscus at birth, and for a little time afterwards, is usually rather deeper than in the adult. The inflammation of the inner coat of the stomach accounted for the sickness."

The next subject is gastritis. The following case is rather an uncommon one, both in regard to its symptoms and to the morbid appearances discovered after death. The inference which Mr. Cooke seems to draw respecting the cause of death is quite as extraordinary as the appearances themselves, namely, that a few five-grain doses of calomel should produce sphacelus of the stomach.

"On the 10th of July, 1823, I was requested to see a young lass, four years of age. The parents informed me that she had been ill about a month, and under the care of a neighbouring surgeon. He considered it an attack of remittent fever. As the child was not better at the end of a fortnight, a physician was consulted, who regarded the case as one of peritonitis, and prescribed leeches, which were four times applied, but in the whole amounted only to 20. About ten days more had elapsed when the friends thought that death was approaching and sent for me, but the case was hopeless. At

three o'clock the following day the child died, and having been informed that the medical attendants had not coincided as to the nature of the disease, I was the more anxious to examine the body, and the parents readily assented.

"Before proceeding with the examination, I obtained the following information:—The child had been healthy till the commencement of this indisposition, when, after a hearty meal, she was attacked with sickness, the bowels became torpid, and the dejections of an unhealthy colour. Fever succeeded, and was accompanied with dyspnœa. The gentleman first called in told me that he had thought it right to act boldly, and had given very powerful medicines; for instance, six grains of calomel at a dose repeatedly. After the first attack there was but little sickness, and there had been very slight expressions of pain. When I saw the child there was great prostration of strength, respiration with difficulty, the tongue was dry, and the teeth were covered with sordes. The pulse was very quick, and there were excessive restlessness and moaning. She had pretty constantly lain on the right side, and superficial sphacelation had taken place from pressure. There also was a petechial spot on the abdomen. The countenance was pallid, the eyes depressed, and during sleep the palpebræ were unclosed.

"The two medical gentlemen were present when I examined the body. The physician, (a very judicious man,) had abandoned the idea of peritonitis, and now predicted that few or no morbid appearances would be found.

"The abdomen was tumid and tense, and on opening the cavity, there certainly was no trace of peritoneal inflammation. The stomach and intestines were greatly inflated, and on merely turning the stomach to one side its contents escaped. The viscus and a portion of the œsophagus were carefully removed, and the inner membrane of the latter was found to be inflamed, and the whole of the adjacent portion of the stomach was in a state of sphacelation of a deep black colour, and the texture destroyed. Inflammation extended some distance beyond the part where sphacelation existed, and the disorganized part was equal in extent to the palm of an adult's hand. There were no other morbid appearances except slight marks of congestion in the liver, and a few patches in the intestines. The physician considered it an extraordinary circumstance that gastritis should have existed without its being accompanied with vomiting. It appeared to me that no inconsiderable mischief, if not the fatal result, was attributed to the injudicious practice of the apothecary, who, however, was rather inclined to exult at his boldness before the physician was consulted."

Softening of the intestinal tube is a disease not very frequently met with. It is not easy to account for this affection where it occurs unattended with inflammation. We are rather sceptical upon the point that the coats of the stomach can be acted upon by the gastric juice after death, unless the fluid should contain some acid or other properties different from those which are natural to it. That the gastric fluid is endued with vital properties, can hardly be denied; but from whence does it derive these properties? Is it not from the stomach? If it be so, it is not probable that this fluid can preserve its vitality longer than the stomach itself, which is the only source of this vitality; and it is quite as improbable that the texture of the organ can undergo the process of digestion before it has lost its vital properties.

"In April, 1826, I was requested to see an infant six months old. It had previously been remarkably healthy, and had cut two teeth, but became ill about the beginning of the month. The symptoms were those of cold; namely, cough, wheezing, sneezing, and inflammation of the conjunctivæ. A week elapsed without any advice, and when I saw the child there was difficulty of breathing and frequent cough; and the piercing cries and green stools indicated pain also in the bowels. Leeches, a blister, antimonials, and mild aperients were the means employed, and in a few days there appeared some amendment. At the end of a week symptoms of cerebral affection became manifest. During the preceding part of the indisposition there had been often knitting of the eye-brows, but it seemed rather an expression of pain in other parts than of disease in the head, but now the child fell into a state of coma and became convulsed. Leeches were applied to the temples, half a grain of calomel with a little antimony was given every four hours, and a blister was applied to the nape of the neck. On the second day from this time the coma and convulsions ceased. The calomel was omitted, but saline and antimonial remedies were continued. Whilst we were buoying ourselves up with lively expectations of recovery, the respiration became more difficult, diarrhœa supervened, accompanied with great rumbling in the bowels from wind, and within a few days, namely, on the 18th of April, the little sufferer expired.

"On dividing the integuments I found a large quantity of fatty substance remaining. The posterior surface of the lungs was the seat of inflammation, but not to a great extent. There was no sign of inflammation in the abdomen, but on tracing the jejunum I found it tear in several places, like wetted paper. The coats here looked exactly like jelly, semitransparent and soft. In the interspaces they were firm as usual. The fundus of the stomach was precisely in the same condition. The appearance greatly resembled that produced by the action of the gastric juice, but as there had been previous disorder of the gastric organs, and as the intestine had undergone the same change as the stomach, it seemed rather the effect of a peculiar morbid process than of chemical action.

"The brain was soft, and considerable effusion had taken place between the membranes, but there was no unusual turgescence of vessels."

The author next recites cases of disorder of the digestive organs caused by chronic inflammation of the peritoneum, and by renal irrita-

tion. We have cases also to show the influence of the brain over these organs. The subject is one of great interest; every practitioner must have witnessed, in children, cases where it was difficult, if not impossible, to find out the real seat of disease. The relation, or, as it is usually termed, the sympathy between the brain and the abdominal viscera, at the age of childhood, is so intimate, that disease in the one seat seldom takes place without affecting the other, and it is often difficult to trace the malady to its origin. Whether the brain, in children, be more susceptible than any other organ, to idiopathic affections, is a question which, perhaps, has not been satisfactorily settled, but so far as our observation has extended, in the examination of the bodies of children after death, the cerebral membranes will be found either very much injected with blood, or to have a gelatinous substance adhering to them; or, lastly, there will be fluid found between them, or in the ventricles, in seven cases out of ten, if not in a greater proportion. Mr. Cooke relates a case of cerebral congestion, producing convulsions and intestinal contractions, which we consider a good specimen of the morbid appearances most frequently found in the brain under these circumstances. Although the case is such as we very frequently meet with, it is not the less interesting for that.

"In the evening of October 22d, 1822, I was requested to see an infant three or four months old. The child had been seized with convulsions twice in the afternoon, and for some days it had been observed straining violently. I was informed by the mother, who had nursed several children, that the bowels were freely open, and that the stools were of a good colour; and yet the straining continued. At the time of my visit it was considerable, and the countenance had a somewhat leaden aspect. There was constant rumbling from the increased peristaltic action of the bowels and from wind, and the abdomen was rather tumid. With the exception of taking a little gruel once soon after birth, the infant had lived exclusively on the breast, and had appeared healthy. There was no convulsions when I saw the child, and therefore I prescribed for it a dose of rhubarb, and some mistura cretæ to take afterwards to allay intestinal irritation. On calling the next morning I found the little patient dead. Convulsions had come on early in the morning, and the child expired.

"The body looked rather yellow, and the nurse informed me that there had been this tinge for a day or two. On dividing the abdominal integuments I observed that the cellular substance had received the same discolouration.

"Nothing unnatural presented itself in the abdomen except a somewhat turgid state of the vessels of the stomach. The omentum was very beautiful, from the numerous lines and inosculations of vessels ramifying through a most delicate and transparent tissue, but the appearance was natural. The intestines, as in the former case, presented marks of irregular contraction, and were rather of a redder hue than usual. The gall-bladder contained bile of a dirty brown colour, and there was no perceptible obstruction in the ducts. The urinary bladder was greatly distended—projecting high into the abdomen—yet so large a quantity of urine had been voided that the nurse's attention had been particularly directed to the circumstance. The stomach was empty, but the mucous coat presented considerable erubescence. The kidneys were rather large.

"In the chest the thymus gland presented itself as usual at this age. The lungs were heathy. The pericardium contained a little fluid, and the vessels of the heart, as well as its cavities, were turgid with fluid blood.

"On opening the head I found the pia mater extremely vascular, and in the interstices of the larger vessels there was a serous deposition, which presented both the appearance and consistence of a soft jelly. The ventricles contained a little fluid in their posterior cornua, and the plexuses, particularly the left, had their glandules much enlarged."

Mr. Cooke treats next of disease of the pancreas, spleen, and liver. In illustration of his remarks on liver disease, he favours us with a great number of interesting cases, but our limits will not permit of our extracting any of them.

We now come to the last chapter of the first part of the work, wherein the author speaks of the influence of the nervous system, and the mind, on the digestive organs. In this country, where the minds of a great portion of the inhabitants are constantly engaged in commercial and similar pursuits, the nervous system contributes perhaps more than its share to the derangement of the digestive functions. Few there are who have not at times experienced some mental anxiety, either of painful hope or the fear of disappointment, and those who have ever been under the influence of such anxiety must be sensible of the effects which it produces on the gastric functions. Perhaps no source of dyspepsia is more fruitful than mental emotion, at any rate no exciting cause can bring on an attack in a more sudden manner. But, it is not the functions of digestion alone that submit to the agency of this powerful cause; the function of almost every organ in the body is either deranged or suspended. The heart either acquires a degree of morbid irritability, or loses a part of its natural sensibility, from the expenditure of the nervous influence on the brain; the stomach rejects that which is presented to it, or retains it in the same state as it was taken in, where it produces a sense of weight, flatulence, and a morbid secretion of acid fluid; the liver forgets that it has any duty to perform in the circle of assimilation, and the stools become often fluid and of a white clay colour, or the bowels lose their natural sensibility, and become obstinately costive; the renal secretion is almost suppressed, or the kidneys assume a diabetic action; the function of the skin becomes deranged, and the muscles lose a great part of their vigour

and tonicity. Whether the medium of relation between the different organs be formed by the nervous system, or by some other agent of a more subtle kind, we shall not now inquire; but sure it is that other organs are as much within the sphere of morbid sympathies as the digestive. We cannot paint this subject in stronger colours than Mr. Cooke has already done.

"To determine the influence which the nervous system exerts over the process of secretion, we need only advert to phenomena of daily occurrence. What a redundance of tears, and even of urine will sometimes be secreted under mental uneasiness! Not unfrequently, however, we witness the very reverse of this, especially when the feeling of distress is intense. Of this a few years ago a most painful instance passed under my observation. An amiable couple, who had been married about a twelvemonth, and who had realized the fruition of hope in the person of a little daughter, had temporary lodgings in the vicinity of town. Whilst the wife prepared the breakfast the husband accompanied some friends to an adjoining stream to bathe. All was made ready for the repast, and the wife, a woman of the acutest sensibility, sat at the window nursing her lively and healthy babe, watching for the first glimpse of their return, and intending to welcome her husband by the joint attractions of her own affectionate and cheerful countenance, and the lovely face of their little offspring. It has justly been said that "hope deferred maketh the heart sick." The time elapsed, messenger after messenger was despatched, but none returned. The fact was the husband was drowned, and the party waited the arrival of a relative from town whom they considered the best channel of communication to the widow. It will be readily conceived that her mental agony was of the most poignant character, and for many days secretion was almost totally suspended. She was unable to weep. The dejections, which were obtained with difficulty, and were very scanty, were almost colourless; and after the lapse of two or three days she became affected with subacute hepatitis. The skin and tongue were uniformly dry, and the kidneys did not secrete an ounce in twenty-four hours. Weeping seems not only an expression but an outlet of sorrow. It appears to sooth the mind, and to allay the irritability of the nervous system. When there exists the inability to weep, the crisis of mental agony from which a mitigation of suffering commences, is protracted.

"Upon no series of organs is the influence of mind more forcibly evinced than on those concerned in digestion. At a moment of full health, and about, with a keen appetite, to partake of the pleasures of the table, the sight of a loathsome object, or the hearing of some distressing tidings, will so disturb the nervous system that articles previously the most inviting to the palate excite digust. If these occurrences transpire immediately after the stomach is replenished, digestion is suspended, the food lies a heavy and oppressive load, of which the patient is not relieved till the organ has ejected its contents. If the food is retained under these circumstances it proves a source of gastric and intestinal irritation, giving rise to acidity, flatulence, colic pains, and ultimately, perhaps, to diarrhœa. Where there is no relation to food, a dull aching and sense of anxiety at the pit of the stomach, in the region of the solar plexus, long remains, even when the mind needs to be reminded of the cause. Not unfrequently mental uneasiness produces diarrhœa without any other obvious effect. Sometimes the agency of mind is exerted on the whole of the abdominal organs, at others on an individual organ, the whole, perhaps, becoming affected consecutively. The effect exerted on the stomach and intestines has been adverted to, and indeed, also on the liver. Perhaps the functions of no organ in the body are more frequently deranged from this cause than those by which bile is formed, and from whatever cause the liver becomes affected, its action or reaction on the mind and nervous system is of the most extrordinary kind.

"Often when the emotion is severe the effects are so manifest that no doubt can be entertained of their connexion. At other times the effects being less prominent, and not productive of material inconvenience, they command little attention, but may lay the foundation of future mischief. When the cause producing morbid action is withdrawn, the derangement usually adjusts itself, or is adjusted by those casual circumstances by which the balance of the vital functions is maintained. These happy results, however, do not always follow. There may be a continuance of disordered function, and the morbid action may issue in organic lesion, not only of the part itself, but extending to other structures, involving them in the same mischief. In most cases of disorganization the sufferer is quite incapable of tracing the disease to its commencement, or to the circumstances in which they originated, and it is highly probable, when not the result of age, a large number of the instances originate in the obscure manner just adverted to: not, indeed, always from mental emotion, but from any other causes of disturbance in the nervous system. When we consider the numerous sources of emotions and passions, from domestic causes, from business, and from topics of popular excitment, we shall regard this as a fruitful and prevailing cause: but we must not exclude diseases in remote parts acting on the brain and nerves, atmospheric influence, indiscretion in diet, and many other circumstances which have a tendency to disturb healthy action."

And we believe our readers will agree with us in opinion, that the following observations are founded on truth:—

"If then this view of the different sources of derangement in the organs concerned in digestion be correct, how is it possible that any single measure can be devised by which

the disorder will be adjusted! To rely on the same medicines, to prescribe the same diet, to establish the same intervals of taking food, to enjoin the same exercises, is nothing else than empiricism. Even if we admit that the effect of the various causes may be alike, surely there must be some reference in the treatment to the cause itself, and likewise to the constitution. Sometimes bleeding will be requisite—sometimes active purging—sometimes perseverance in the mildest doses of mercurial remedies—sometimes bitters or tonics. At all times the diet must be most carefully regulated, but we should bear in mind that there are persons who cannot undergo very long intervals between the seasons of taking nourishment without being distressed, and this is particularly the case with children. I do not advocate a system of repletion, nor the ridiculous practices of parents who allow their children to be almost constantly eating; yet the digestion of children is generally more rapid than that of adults, and how often do we see some children in a school, or family, who cannot endure the same interval as their companions, but in attempting it are reduced to a atate of extreme irritability and languor.

"With respect to the administration of purgatives, there are three points to which I shall advert. There will sometimes be fatal accumulation of fæces in the intestines, when both the patient and attendants report that the bowels are freely relieved. When the obstruction arises from a mechanical cause, as hernia, or contraction, great caution is necessary in the administration of purgatives. Purgatives are not unfrequently persevered in to remedy unhealthy secretions, pain, tenderness, and flatulence, solely kept up by the means employed."

"Whenever dyspeptic symptoms arise from suspended or morbid action in the liver, alterative doses of mercury are usually had recourse to. This is, perhaps, the most common form of derangement, and in its treatment Mr. Abernethy has justly acquired great celebrity. His blue pill administered in a dose, and at intervals, short of irritation, aided by decoction of sarsaparilla, has been most extensively useful. But I may venture to submit that Mr. Abernethy himself has circumbscribed his principles too much. He has often been prescribing for an effect without regarding the diversities of cause. The principles, however, which he himself has enjoined have been greatly abused, and many practitioners, whilst avowedly acting upon them, have increased the derangement in the functions of the liver by the too free administration of the remedy. For an adult five grains may be an adequate dose, but it is impossible to determine this with certainty; for some persons are so easily acted upon by mercury, that half the quantity might be as much as can be borne. Not unfrequently it is necessary to diversify the form of the mercurial, and this may be done without violating the principle. Calomel, under some circumstances, will exert a decidedly more beneficial effect than the blue pill. Advantage will sometimes be derived from the employment of mercurial remedies at much shorter intervals than at others; the inaction of the liver resists the effects of doses administered at the interval of two days, whilst the same quantity taken in divided doses, thrice a day, excites and establishes secretion. Whatever plan is adopted the effect must be watched, for if mercury do not act well, it might, if long persisted in, do excessive mischief. Green and slimy stools are often the result of the excess of mercury, and I believe it is not very uncommon with some practitioners to redouble their forces when these appearances are detected, by which practice they aggravate symptoms they intend to allay. Cases very frequently occur in which, by reducing a grain of calomel to half or a quarter of that quantity, or blue pill from five grains to two or three, the secretions, from being of the morbid qualities just mentioned, assume a healthy character. As it is not the design of this administration of mercury to act on the bowels, except secondarily, patients should be made aware of this circumstance, that they may take some mild aperient if requisite. It is really surprising what essential relief is sometimes experienced from such medicines as gently excite hepatic secretion before any alvine excretion has ensued, but patients are often rendered uncomfortable from an idea that they ought to be purged."

Mr. Cooke, after tracing, in the first part of the work, the sources of derangement of the digestive organs, to diseases of other viscera, proceeds, in the second part, to inquire into the influence of this derangement on the functions of remote seats, and on the mind. We have first, affections of the head from gastric derangement. The most common effect produced on the brain, by gastric disorder, is cerebral congestion. The vessels of the brain appear to lose their tone, in a great measure, and allow themselves to be dilated, by their contents, beyond their usual caliber. In these cases, general bleeding commonly aggravates the cephalic symptoms, and relief is often procured from cordial and stimulating remedies. Local bleeding, however, by leeches or cupping, and counter irritation applied at a short distance from the head, will tend materially to the relief of the patient.

Thickening of the cerebral membranes, and cerebral effusions, are, also, no uncommon appearances in case of death from disease of the abdominal viscera. The following case will show the connexion of the cerebral disease with that of the heart and abdominal viscera:—

"Miss P——, thirty-six years of age, of a dark complexion, and having a dejected and ill-tempered countenance, complained of uneasiness in the stomach, with extreme depression of mind, and excessive irritability. She had frequent sensations of heat and fulness in different parts of the body, but when these parts were touched by another person they did not communicate any sense of heightened

temperature. The bowels were rather confined, the appetite was impaired, and the eructations were acid. There was pain in the forehead, and occasionally slight confusion of mind. The feet usually were cold. The pulse was ninety-six, and moderately soft. Whenever she attempted to sleep she was roused by violent startings, occasioned by the most horrific dreams and visions. She had tried blisters and some domestic remedies without any good effect. Under these circumstances I was consulted on the 19th of July, 1813, and recommended a grain of calomel to be taken every other night, and some infusion of roses and sulphate of magnesia three times a day. With the first pill she took a saline draught, and did not commence her mixture till the following day. She enjoyed a more comfortable night, and seemed more tranquil in the morning. The bowels had been moved once, but they were afterwards kept freely open by the neutral salts. By the 25th she was so much better, in every respect, that I discontinued my attendance.

"I did not see this lady again during her life, but having heard of her decease on the 29th of September, I obtained permission to examine the body. Before proceeding to the inspection the following report was given me. After my attendance in July she left home for awhile, and seemed much better, but at length the illusive visions returned; she complained of violent pain in the vertex, but extending to the forehead and occiput, sometimes affecting one part more than another. She had frequent flushings, and for months no menstruation. Though constipation was so evidently connected with the early symptoms the bowels were reported to have been perfectly regular during the latter period, confirming a remark already made on the changes which take place on the development of cerebral disease. At one period the powers of the mind were so bewildered, even in the day, that it was judged necessary to confine her, and she was in a lunatic asylum for three weeks. From this period to the time of death she did not retain the correct exercise of her mental faculties.

"*Examination.*—The dura mater was almost inseparably connected with the skull, particularly throughout the upper part of the head, and the vessels in the membrane were unusually turgid. The pia mater was slightly inflamed under the os frontis, to about the extent of the palm of the hand, extending on each side of the longitudinal sinus. There were likewise patches of inflammation or congestion in other parts of this membrane.

"The peritoneal coat of the intestines was slightly inflamed. The spleen was enlarged to double its ordinary size. The mucous coat of the stomach was reddened by petechiæ and ecchymosis, especially at its cardiac orifice, but the same appearance extended some way up the œsophagus. The pericardium contained about an ounce of fluid. The annulus venosus of the left side was contracted to a mere fissure, about half an inch in length, and when dilated was not capable of admitting more than the little finger. The circumference of this aperture was considerably thickened, and the carneæ columnæ were contracted. The lining membrane of the auricle was more opaque than usual, clearly evincing that chronic inflammation had existed. The aortic valves were so much thickened as to prevent their having any valvular effect."

Some of the symptoms arising from derangement of the functions of the abdominal viscera, are, now and then, whimsical enough. Physiology must make a great advancement before we shall be able to account for the very different effects which gastric disorder produces on the brain in different individuals. We may observe that the abdominal disease frequently bears but a very small proportion to the cerebral symptoms, if we may judge from the readiness with which it may be removed.

"On the 8th of February, 1808, I was consulted by an individual, who being unable to give any very explicit account of his indisposition, felt a little embarrassment on presenting himself for my advice. He was conscious of some affection of the head, but it was so exceedingly slight that he regarded it as scarcely worthy of notice. The circumstance that most annoyed him was the nightly appearance of apparitions. He distinctly saw the figures of persons at his bed-side, and held conversations with them; and he assured me that if his judgment had not opposed the idea he should have considered his house as haunted.

"On careful inquiry and examination I found that the man's tongue was somewhat coated, that his excretions were of an unhealthy colour, and that his bowels were rather irregular; therefore, I had no doubt that the ghostly visiters were *bilious phantoms*. He was advised to take six grains of the blue pill every other night, with a slightly stimulant bitter combined with a little carbonate of ammonia twice daily. A blister was also applied *inter scapulas*.

"After having taken two doses of the pills he suffered no farther inconvenience from visions.

"In this instance the evidence of hepatic derangement was but slight, not enough to attract the observation of the patient himself; but the analogy of the circumstances to numerous cases of the same kind, in which similar phenomena had occurred from disorder in the liver, led me to attribute the nightly illusion to that cause. The speedy removal of the annoyance, under the simple means employed, confirmed the inference which had been deduced. Though in humble life, the patient was an intelligent man, and neither credulous nor superstitious. He, therefore, wisely inferred that what appeared to be a deviation from the ordinary course of nature must necessarily be owing to some error in his own perceptions. It will be found, I believe, that derangement in the functions of the digestive organs is the most prolific

source of the phenomena of ghosts, usually ascribed to supernatural agency. Their appearance, indeed, is frequently connected, in the most plausible manner, with events. This often happens from the mind's having dwelt in earnest and solicitous expectation of the event; or it might have resulted from accidental coincidence; but much more frequently they are connected, *post factum*, by persons who delight in telling what is marvellous."

Mr. Cook relates a very interesting case of amaurosis, from an affection of the head, consequent on abdominal disease, but it is too long to extract. The following morbid appearances were observed on examining the body:—

"As the body lay in the horizontal position, the resistance of the other viscera having ceased, the liver and spleen did not feel so tumid as they had done during life; still, it will appear in the sequel that they were much enlarged.

"The eyes did not present an unnatural appearance, except that perhaps there was a little more cloudiness in the pupils than usual. The scalp adhered to the cranium with unusual firmness, and so did the dura mater. There was very slight deposition of fluid between the membranes. The pia mater presented a highly vascular appearance. Before removing the brain from its situation we particularly examined the state of the optic nerves. In common with every other part there was an increase of vascularity about their point of union, but from this point anteriorly the nerves appeared of their full size, and were healthy in texture; but posteriorly, towards the thalami, they were excessively softened. If there were any difference in the degree of softness the right was rather the softer. We carefully removed the brain, and proceeded to a cautious dissection. The cerebral substance exhibited rather more numerous points of blood than we find in the healthy brain; but this was more particularly manifest over the optic thalami, and in a greater degree on the right side than on the left. On laying open the right ventricle we found the lining membrane crowded with vessels, and in many places it presented somewhat of a bloodshot appearance. The thalamus was greatly softened in texture, and on its anterior surface the membrane appeared thickened and opaque, as if from a deposition of lymph. There were corresponding morbid changes in the membrane of the left lateral ventricle, and in its thalamus, though not quite in an equal degree. We traced the nerves into the thalami, and found that they continued soft till lost in the softened bodies from which they originate. The left corpus striatum appeared unusually prominent. The ventricles did not contain a larger quantity of serous fluid than is ordinarily found after death.

"With the exception of heightened vascularity of the pia mater, and a slight patch of opacity in the tunica arachnoides, the cerebellum appeared healthy.

"On opening the abdomen the spleen first presented itself to view. Its surface was uniform, though it contained a few small tubercles. It weighed four pounds and a half. The liver was about double its ordinary bulk, and rather indurated, but its structure had not apparently undergone alteration. The stomach was healthy and empty. The peritoneal coat of the intestines, and this membrane generally, retained its natural aspect; but we could perceive that the mucous coat was diseased in patches. We opened the cœcum and found the mucous coat much eroded, putting on a worm-eaten appearance; and where the ulcerative process had not gone on, the membrane was of a deep red colour.

"The cavity of the abdomen contained about two pints of serous fluid."

We have several cases recited, to show the effects of abdominal disease in producing a derangement of the intellectual and moral faculties. The author speaks also of affections of the muscular system, of the pelvic viscera, of the mouth and nose, of the heart and lungs, of the lymphatics, and of the skin. Through these subjects our limits will not permit us to follow him. From merely looking at the title page of the present work, we were disposed to regard the motives of the author with rather a suspicious eye, but we found ourselves most agreeably disappointed as we proceeded in the perusal of the volume. Mr. Cooke has treated his subject in a masterly and scientific manner; and we know of no work professing to treat of disorders of the digestive functions, and of other functions more immediately allied with them in the circle of relation, which we could more conscientiously recommend to the notice of our readers, than the present.

From the Edinburgh Medical and Surgical Journal.

REPORTS OF THE PROCEEDINGS IN THE HIGH COURT OF JUSTICIARY. By David Syme, Esq. Advocate. Vol. I. Part I. *from November* 1826 *to May* 1827; and Part II. *from June to December* 1827. Edinburgh, 1827. 8vo. pp. 280. With an Appendix.

As this is unquestionably a work of great interest to the medical man as well as the lawyer, although more especially addressed by the author to the latter, we feel assured that a short notice of it will not be thought inconsistent with the objects of a Medical Journal.

Mr. Syme's Reports include a notice of every case that is tried in the Justiciary Court of this city, with a more detailed account of all discussions on points of law, an abstract of the general evidence whenever it is important, and a full analysis of the medical evidence in every instance in which professional witnesses are examined. This is the first attempt that has been made by a lawyer to rescue from oblivion the medico-legal inquiries annually made throughout Scotland on the occasion of criminal trials. The value of the records which have thus been preserved in the course of a single year, will lead every medical jurist

to lament that this ample field of observation and experience has been so long shut to science, and to hope that the author will be able to proceed with the same spirit and success with which he has begun. A collection of such cases as are contained in the numbers already published, if continued for a few years, will do more to raise medical jurisprudence from the station which it has hitherto occupied, to make medical evidence be respected by courts of law, and medico-legal studies be prosecuted by the medical profession, than all the declamatory complaints of unjust neglect which have for some years past been anxiously poured forth by its votaries.

To the medical jurist, and more particularly to those who have deplored the slow progress which the science of legal medicine has till lately made in this country, the evidence on the trials reported by Mr. Syme must give unfeigned pleasure, as it bears the most ample testimony to the fact, which must likewise have been forced upon their attention from other sources,—namely, that in this part of Britain medical jurisprudence is now at length claiming for itself on all hands the regard to which it is so justly entitled. It will be seen from Mr. Syme's Reports that our law officers are now sensible of the necessity of entrusting medico-legal investigations to competent hands; that even in remote country districts these investigations are now often conducted in an unexceptionable manner; and that, as a necessary consequence, the chief medical questions in the cases are answered with precision, and with much less of that odious discrepancy of opinion which has so long prevailed, to the disgust of courts of law and the disgrace of medicine. It is an event probably unprecedented in the history of the Justiciary Court, that in no less than three cases of poisoning, which have been made the subject of trial in succession, and which have been all of a complicated nature and have required much nicety of investigation, the question of the occurrence of poisoning, and all collateral points, have been decided without any material difference of opinion, and without the ingenuity of counsel having been able to throw any doubt over the accuracy and trust-worthiness of the witnesses.

The trials of which Mr. Syme has given the medical evidence in detail are the following,—four cases of murder by wounds, three cases of murder by poison, one case of child-murder, a case of assault with intent to murder by strangling, and a case of the administration of poison with intent to murder.

1. The first case, No. 33, is that of *William Alexander* and *Janet Blackwood*, who was accused of having murdered the wife of the former by repeated blows with the fist and with various blunt instruments. It came out in evidence that the deceased was frequently struck on the face and body by both prisoners, and in particular that, while she was sitting on a chair in a state of beastly intoxication, her husband struck her a severe blow with the fist near the left ear, in consequence of which she fell to the ground, striking the right side of her head against the cross bar of a table,—that, from that time or soon after, she remained in a state of insensibility till two days afterwards, when she died;—and that besides various contusions on the head, body, and limbs, and a fractured rib, there was found, opposite an ecchymosed spot on the right and upper part of the forehead, an effusion of coagulated blood under the dura mater, to the amount of four ounces.

Mr. Newbigging, the principal medical witness, very properly ascribed death to this effusion, and the effusion to the injury received in consequence of the head having come in contact with the cross bar of the table. He admitted, however, that the injury might have been inflicted by a fall from the bed, if the head struck a hard body; and likewise that the effusion might have been caused by excessive drinking without any external injury at all.* But he concluded by saying he felt himself fully warranted from the circumstances, in ascribing death to the injury. Another witness was also examined, whose name we shall have the charity to suppress, but whose evidence was much too singular to be passed without notice. He stated that he could not think the chief injury was caused by any of the blows described by the other witnesses, the injury was so severe;—that such an injury would require a violent blow with some blunt weapon, or a fall from the height of a story or two;—and that he could not think it was caused by a fall, *because the room was so small;* besides it was admitted *a drunk man fell lighter than a sober man.* To the serious part of this evidence it is enough to oppose a statement by Mr. Newbigging, that "a blow on the head, though not very severe, often produced serious mischief within:" The prisoner Blackwood was acquitted, and Alexander upon Mr. Newbigging's evidence, that the fatal injury was caused by the fall, not directly by the blow, was found guilty of culpable homicide, and sentenced to fourteen years' transportation. We confess we cannot exactly enter into the nice distinction which in a case of this kind the law draws between the direct injury caused by a blow, and the indirect injury caused by a fall, which is received in consequence of a blow.

2. The next trial we shall notice, No. 38, is that of *Allan Grant*, *James Stewart*, *Mary Muirhead*, and *Isabella Kerr*, for the murder

* We heard at the time some surgeons doubt the accuracy of the witness in this statement, on the ground that they had never personally witnessed extravasation in any dissections of persons killed by excessive drinking. Mr. Newbigging nevertheless was amply borne out in his opinion by the records of medical jurisprudence: In Bernt's Contributions no fewer than four examples of extravasation are related, (*Beitrage zur gerichtlichen Arzneikunde*, ii. 59. iv. 38.) So rash is it to rely, as many would have witnesses do, on pure personal experience.

of Mr. Dow, and for robbery and theft, a mysterious case, which made a great deal of noise at the time. It need not detain us long, however, as the medical evidence threw little light on the circumstances of the alleged crimes. The theft was fully proved; but there was a complete want of moral evidence in support of the charge of murder. What little was procured, indeed, favoured the presumption of accidental death; for the deceased was much intoxicated at the time of his death; his dead body was found at the bottom of a dark stair, and the cause of death was discovered by medical inspection to have been fracture of the fourth cervical vertebra. Mr. Newbigging, the chief medical witness on this trial also, deposed, that the appearances of contusion found by him on the head were such as might have been produced by a fall; that the fracture was a very likely accident to be produced by such a fall; and that it could not be produced in any other way, except by a large heavy body falling on the head, or "some very heavy instrument used with some extraordinary degree of force." The Lord Advocate, considering the evidence, especially of the medical witness, departed from the charge of murder. The prisoners were found guilty of theft and transported for various periods, according to their share in the theft.

3. The third trial to be noticed, No. 44, is a rare one in respect to several of its features. The most important question which was involved in it related to the responsibility of the prisoner for the death of the deceased, death having been caused by tetanus, the consequence of unimportant wounds. *Alexander Mackenzie* was indicted for robbing, assaulting and murdering Alexander Clerk; and the murder was charged to have been committed by numerous blows and wounds inflicted on various parts of the body, in consequence of which he languished for ten days and died. It was proved, that, although the deceased was stunned and confused by the maltreating he experienced, he nevertheless had not received any severe injury. On the third day after, however, he was attacked with incipient symptoms of locked-jaw, which increased so slowly that on the fifth, sixth, and seventh days he was able to go out, and on the seventh day particularly was out most of the day at his work. From that time the symptoms increased more rapidly, and he died on the tenth of true tetanus. On dissection the only appearance of note observed was inflammation of the throat and of the trachea and bronchi.

The medical witnesses examined were Mr. Newbigging, Mr. Liston, and Mr. Mackenzie, besides a medical student and another medical gentleman who deposed to certain particulars of the deceased's illness. In reply to a question which was a good deal pressed on the witnesses, they all agreed that the tetanus was not caused by exposure to cold when the man was out on the fifth, sixth, and seventh days, but that it existed previously. It was likewise agreed on all hands, that the wounds must have been the cause of it, even though they were trivial, because it had been known in other cases to arise from wounds even more trifling. In relation to the *degree* in which the wound and tetanus stood to one another as cause and effect, it was farther agreed, that tetanus lay in the natural progress of events, just like mortification, although neither so necessary nor so common a result. In so much, in fact, was it not a necessary or common result of such wounds as the deceased received, that it never would have been looked forward to in the prognosis by any surgeon.

These opinions seem all perfectly correct. Perhaps the *accidental* nature of supervening tetanus should have been placed in a stronger point of view, namely, by the fact, that in forming a prognosis not only in a case like this, but likewise in any case whatever of external injury, it is next to impossible to regard tetanus otherwise than as a very rare and unlikely consequence.

The prisoner was found guilty of culpable homicide, and sentenced to fourteen years transportation, the Court holding, that *the wounds not being of an aggravated description, and there not being any proof of previous deadly malice or intention to kill*, the case could not be accounted one of murder. It is of importance that the medical witness and jurist should be distinctly aware of the effect of his testimony on the law as well as the facts of a case. We may remark in explanation, therefore, that in this instance the previous intent, which is indispensable to constitute murder, was not proved to have existed, either by the evidence of the prisoner's words and actions before, during, or after the assault, or by evidence derived from the wounds being in themselves severe or dangerous. Had this intent been proved either in the one way or the other, the case would have been one of murder; for it appears to have been the opinion of the court that tetanus, though an effect, neither necessary, nor common, nor such as in like circumstances may be anticipated, was a consequence not sufficiently *accidental* to have relieved the prisoner from responsibility.

4. The fourth case, that of *Campbell* and *Helm* for culpable homicide, No. 88, possesses no particular interest. The deceased was killed by sustaining a fracture of the lower part of the occiput, attended with effusion, and the fracture was received in consequence of a fall from a knock-down blow among stones.

5, 6, 7. The three next trials, No. 34, and App. 1 and 2, are by far the most interesting in the work. They are the trial of *Mrs. Smith* for the murder by poison of Margaret Warden, —of *Margaret Wishart** for poisoning her sister,—and of *John Lovie*, a farmer, for poisoning his servant Margaret Mackisser. Of the two first nothing farther need be said here, as they are already reported in detail in this Journal by Dr. Christison. The third was exceed-

* Vide Journal of Foreign Medicine, Vol. I. page 642.

ingly similar to the rest, being a charge of murder committed on a female who was believed to be with child to the prisoner. The case was tried at Aberdeen last autumn circuit. The chief medical witnesses for the crown were Messrs. Jameson and Coutts, surgeons at Fraserburgh, Dr. Blaikie, Professor of Surgery, Dr. Knight, Professor of Natural Philosophy, and Dr. Forbes, Professor of Chemistry at Aberdeen, and Dr. Christison of Edinburgh. The proof of death by poison was complete. After some ineffectual trials made at the time of the inspection, the contents of the stomach and the stomach itself were divided into two portions, of which one was entrusted to the Aberdeen professors, and the other sent to Dr. Christison; and both succeeded in detecting arsenic unequivocally. In the face of very strong moral evidence the prisoner escaped with a verdict of *not proven*, probably because the jury did not consider the crime satisfactorily attached to the prisoner, while there was not some direct evidence of the administration of the poison. There is only one circumstance in the case which calls for special notice here. On the trial of Mrs. Smith it was stated by Dr. Christison that he found *bright yellow* particles on the surface and imbedded in ulcers of the stomach; and he imputed these to the conversion of part of the oxide of arsenic into the sulphuret by sulphuretted hydrogen disengaged in the stomach. Dr. Fyfe stated that he did not conceive this to be a probable explanation; and Mr. Jeffrey, the prisoner's counsel, elicited from Dr. Christison on his cross examination, that sulphuretted hydrogen had never been sought for in the human stomach after death.* The case of Margaret Mackisser sets this question at rest; for Dr. Christison again found shining yellow particles on the surface, and, instructed by experience, did not leave the existence of sulphuretted hydrogen to be presumed from analogy, but actually detected it in the bottle, in which the stomach was sent, by immersing in the bottle a slip of paper dipped in nitrate of lead. This appears in fact to be by no means an uncommon appearance in the stomach. It was remarked in another of Dr. Christison's cases (Edin. Med. Chir. Trans. ii. 284.) We have ascertained by experiment that the solid oxide is converted into sulphuret by sulphuretted hydrogen if moisture is present. This might have been presumed; but being doubted, it is right to determine it expressly.

8. The trial for child-murder, No. 95, was followed by conviction, a rare result now-a-days; but the circumstances were different from those of the ordinary instances of child-murder, the child being seventeen months old, and the accused person being the father.—*James Glen* was indicted for the murder of his natural child by throwing it in the Forth and Clyde Canal, or by first strangling and then drowning it. In such cases the medical evidence is often unsatisfactory, because the signs of strangulation as well as of drowning are not unfrequently obscure, particularly in children. The present case was of that nature, for it is not easy to see how the medical witness was borne out in the strong opinion delivered in the report and on the trial. The child was carried away from its mother by the prisoner on the 1st May, was found dead in the canal on the 9th, and was inspected on the 10th. The identification of the body was established in part, and very satisfactorily by the medical evidence; for it was proved, on the one hand, that though the body was in some places considerably decayed, the face retained its natural appearance; and on the other hand, that certain marks produced by burns, which were referred to by the mother and others, existed precisely where they were described to be. The inspectors further found, "on the fore part of the neck, over the windpipe, a softish furrow, with a hardened ridge both above and below; an appearance such as would be produced by violence applied to effect strangulation;" and after explaining that in some cases of death by strangling or drowning no characteristic appearances are detected in the body, they conclude that, although they cannot speak positively, they think it probable that forcible means were employed to strangle the child. On his examination the chief medical witness "leant strongly to the opinion that strangulation was the cause of the child's death." Other particulars observed during the inspection, and not specified in the report, may have supported this opinion. But the report and oral evidence of the *medical* witnesses certainly does not state any circumstance whatever by which death by strangling could be distinguished from strangling effected intentionally or accidentally *after death*. Altogether the report does not appear to us sufficiently detailed or explicit. In all complicated and equivocal cases, such as this must be admitted to have been, it is of the utmost consequence that the inspector specify all the particulars of his examination, since it is well known to medical jurists that the issue of investigations of the like kind often turns upon facts which at first appear to the inspector of insignificant importance. The prisoner, we have remarked, was condemned, and the sentence was put in execution. The moral evidence was exceedingly strong, so that even a presumption of violent death from the medical circumstances was sufficient for condemnation.

9. The next case,—a trial for assault with intent to murder by hanging or strangling,—deserves to be noticed, not so much on account of the medical evidence, which was exceedingly short and simple, as for the singular circumstances under which the crime was alleged to have been committed. The prisoner, *Marion Brown*, an old woman of 69, was accused of having attempted to hang her husband, who was some years older. This variety of homicide is stated in works of medical jurisprudence to be one which can be successfully attempted only by a person very superior in strength to his victim, and is in fact very rarely

* See report of Mrs. Smith's Trial, *passim*.

resorted to except by several persons conjunctly. In the present instance, the prisoner contrived to twist a small rope three times round the neck of her husband, while he was asleep, and to tie him up to a beam in a room, in such a manner, that, when the neighbours entered, the man was found lying on the floor with the head raised about a foot from it. He was quite insensible, the hands were dropped down powerless by his side, his face was livid, and it was some time before he could be roused; so that little doubt existed that he would have perished had he remained as he was two or three minutes longer. He deposed that he went to bed quite sober, having drunk no more than his share, with five other people, of three gills of whisky; and that *he was not aware of any thing which passed during the attempt to hang him*, or after it, till the surgeon succeeded in restoring him to his senses. The possibility of strangling a person during sleep, without his ever becoming conscious of it, and consequently without his being able to struggle, has been questioned by medical jurists. The case now quoted will show that such a thing is quite possible; and that, contrary to what is generally believed, a person may strangle one much stronger than himself, without any assistance.

The prisoner was proved not to have entertained decided previous malice against her husband, and to have been at the time of the act in a state of intoxication. The prosecutor, therefore, departed from that part of the charge which accused her of intent to murder, and she was sentenced to eighteen months of Bridewell.

10. The case of *Mary Anne Alcorn*, the last we shall mention, is novel, as being one of the few, if indeed not the only instance in modern times, of the crime of poisoning having been substantiated without the discovery of the poison, nay, without any distinct evidence what particular poison had been used. The prisoner, a servant girl, sixteen years of age, was accused of having mixed tartar emetic or some other poison with the meat and the gravy of which her master and mistress partook at dinner,—in consequence of which they were affected with violent symptoms of irritant poisoning, even to the endangering of their lives. A considerable part of the meat was left, and was examined chemically by Dr. Turner and Dr. Christison, without any poison being detected. But it is necessary to add, what has not been mentioned in Mr. Syme's report, that, from the particular way in which the suspected substance was mixed with the meat, it must have happened that all, or nearly all of the poison was taken by the family at dinner. The whole particulars of the case were very important in a medico-legal point of view; but they are cursorily mentioned in Mr. Syme's work, and even upon the trial they were not gone into with that minuteness which is necessary for enabling the reader to see clearly the grounds of the opinion delivered by the medical witnesses. Our limits will not permit us to supply the deficiency. We can only mention that one of the witnesses, Mr. Thomson of Portobello, who attended the family in their illness, deposed,—that he had no doubt they suffered from the effects of poison,—that he could not say what the poison was,—but that he suspected it was some preparation of lead. The other witness, Dr. Christison, deposed,—that, that from the pure medical circumstances, poisoning was highly probable, if not certain, —that his reasons for this opinion were the nature of the symptoms, the time at which they began after a suspected meal, the fact of *three* persons having been similarly and simultaneously affected (for the prisoner also took a little of the meat and was slightly ill,) and lastly, the fact, that all those who were taken ill suffered in proportion to the quantity they had taken of the particular dish which was suspected. He was inclined to suspect tartar emetic to have been the poison administered; but spoke doubtingly on that point.

The prosecutor, in consideration of the moral evidence, gave up the charge of intent to murder, and the prisoner, having been convicted of administering a deleterious substance with intent to do grievous bodily harm, was sentenced to twelve months confinement and hard labour in Bridewell.

The account we have given of Mr. Syme's labours will convey some idea of the addition which is likely to be made to our medico-legal information, by the continuance of them. We have just one word to say with regard to the accuracy of the reports. Mr. Syme gives only an analysis of the medical evidence, although a pretty full one. That this has been done with ability we can testify from ample means of knowledge. Still it is an arduous undertaking for an unprofessional man to give an abstract of medical opinions and statements. The alteration, omission, or interpolation of a single word, may change entirely the meaning of a passage, although the extent of the change is not apparent to the reporter. Some errors were therefore unavoidable; and, accordingly, we could point out several passages where, if recollection serves us correctly, errors of this kind have crept into Mr. Syme's Reports. They are inconsiderable, it is true, and only upon collateral points, not very directly influencing the leading opinions delivered; but still they are such as would lead a medical jurist to conceive the witness spoke loosely or in ignorance. On the whole, however, as we have already said, the abstract of the medical evidence is remarkably accurate; and greater accuracy could not well be ensured, unless the evidence was reported in the very words of the witness.

We must not forget to mention, that the author has in every case published the written medical reports verbatim, and several of them are very important. A natural consequence of this practice will be, that medical inspectors, for fear of having their carelessness exposed, will pay more attention to the framing of the reports, which are often miserably defective. If drawn up as they ought to be, they thould constitute by far the most valuable part of the work to the student of medical jurisprudence.

Medical and Philosophical Intelligence.

Detachment of the Placenta by the Injection of Cold Water.—Since the memoir of Dr. Duparcque, contained in the present number, was sent to the press, we have noticed in the Journal Général de Medecine, &c. a paper by Dr. Legras on the same subject, read before the Societé de Medecine, and printed by order of that body. We have not room for a detailed analysis of this article, which is followed by a copious report by MM. Duchateau, Chailly, and Gendrin, and shall therefore lay before our readers a brief summary of its contents, referring them for further information to the journal above mentioned.

Dr. Legras was induced to make trial of the plan recommended by Professor Mojon, from having observed that the ligature of the placental portion of the chord, generally accellerated delivery, an effect which he attributed to the congestion thereby produced in the vessels of the placenta. It was desirable, however, to determine in the first place the safety of the plan, by measuring the degree of cold produced by the injection; and from some experiments made by him, he ascertained that water at 59° did not reduce the temperature of the placenta below 70°, a temperature which he supposed could not be productive of injurious consequences. In proceeding to the injection, the umbilical vein should be preferred to the artery, inasmuch as its greater diameter allows the injection to arrive more rapidly at the placenta; the chord should be divided as near the vulva as possible, and the temperature of the water employed should not exceed 59°; from six to eight or nine ounces will be sufficient. Its first effect is a slight degree of pain, which is speedily followed by uterine contraction. Several cases are related. In one of them, the uterus fell into a state of complete inertness after a long and tedious delivery of twins; the placentæ remained adherent, and after having ineffectually attempted to excite uterine action in the ordinary methods, an injection of cold water was thrown up each chord; contraction of the uterus immediately supervened, and the placentæ were expelled in consequence. The utility of the plan in question, is still more apparent, when the placenta is retained in cases of premature delivery; in such instances the adhesion of this viscus is generally more considerable, the chord less able to support the efforts made for its extraction, and the introduction of the hand, both difficult and painful. In a case of the kind recorded by Dr. Legras, the patient was delivered of a dead putrified fœtus, in the fifth month of utero-gestation; an injection composed of equal parts of vinegar and water was thrown up, and was followed by the immediate expulsion of the placenta, which was soft and easily ruptured.

Dr. Legras terminates his memoir with the following conclusions.

1. Pure water injected into the vessels of the placenta while adherent to the uterus, cannot be productive of injurious consequences.

2. In cases where inertness of the uterus is the result of distention, arising from a plurality of children, or the great quantity of liquor amnii, the injection of cold water has always succeeded in occasioning the expulsion of the placenta.

3. In cases where inertness is complicat ed with uterine hemorrhage, arising from the partial detachment of the placenta, water combined with about a third part of vinegar, has invariably excited the contraction of the uterus, arrested the hemorrhage, and facilitated the expulsion of the placenta.

Suppression of the Urinary Secretion.—The patient, æt. 12, during some general indisposition, which lasted five days, and yielded ultimately to the administration of an emetic, had not passed a drop of urine; a physician was then consulted, and prescribed a diuretic mixture, which excited an abundant discharge. The suppression, however, again recurred, although the child continued apparently in good health, and drank his ordinary quantity of liquids. For the space of nineteen days, the warm bath and other appropriate remedies were employed, without being productive of the slightest advantage, and Dr. Ramm was consulted 20th February, 1827. The child had not urinated for more than seven weeks; every two or three days, he had an alvine evacuation of a very solid consistence, and had not been observed to sweat, even after leaving the bath; he drank copiously, his appetite was good, sleep tolerable, and he complained of no uneasiness in the kidneys or bladder. There was no room for deception in the case, as the child was carefully watched by his parents, who could have had no interest in thus imposing upon the physician. A catheter was introduced on the 22d, but the bladder was found completely empty. Thirty drops of a mixture composed of two drachms of castor oil, six of Venice turpentine, and one ounce of copaiba, were directed to be taken three times a day, in an emulsion of sweet almonds; frictions on the loins with the oil of turpentine, twice a day; and a regimen consisting exclusively of asparagus, horse-radish, celery, radishes and beer. On the morning of the 24th, he evacuated more than a *litre* of limpid urine, slightly mucilaginous; an equal quantity was passed on the 25th and 26th, and a still greater amount on the following days. The dose of the mixture was diminished, and on the 8th of March, it was entirely discontinued, the urinary secretion being completely re-established.

A case somewhat analogous to the above, is detailed in the Nouvelle Bibliothèque Medicale for 1815, and another, in a work by Dr. Koenig, on the Diseases of the Kidneys, published at Leipsic in 1826.—*Nouv. Biblioth. Med. from Hufeland's Journal.*

Since translating the above, we observe in the *Bull. des Sciences Médicales*, the account of a case by Professor Berres of Lemberg, in which the secretion was suppressed for more than six months. The patient, a boy, æt. 13, had on the 22d October, 1822, a violent paroxysm of fever, which was followed, two days after, by a miliary eruption. Exposed to cold when convalescent from this attack, he had a second paroxysm, which induced a state of great debility; obstinate constipation supervened, and resisted purgatives and enemata during twelve days. On the 20th November, he complained of insupportable pain in the rectum, which was especially severe, when he had an alvine discharge. In the month of January, at the same time the constipation continued, the urine decreased in quantity, and was suppressed during 15 days; this suppression was twice repeated till March, when it again occurred, to continue more than six months.

In July, 1823, the patient was in a state of great emaciation; he was still troubled with constipation, and had, moreover, a periodical pain in the loins, so violent that he lost all consciousness, and was agitated by convulsive movements during the paroxysm. The abdomen presented a rounded form, and appeared distended when the patient was in a standing position; in a state of supination, there was an elastic, but not fluctuating prominence, on each side, descending from the lumbar region towards the pelvis, and separated by an interval from its fellow on the opposite side. The bladder appeared to be empty; a slight percussion upon the abdomen produced a sonorous noise, and pressure upon this part was productive of acute pain. The head was unaffected, pupils dilated, tongue clean, appetite impaired, intense thirst, the sense of taste lost, respiration short and accellerated, skin dry and exhaling no urinous odour; pulse frequent, with some degree of hardness, sleep disturbed, &c. Upon exploring the rectum, some elastic tumours were discovered upon its sides, but their nature could not be determined. The urethra was so much contracted, that a bougie larger than No. 2 or 3, could not be introduced; the genital organs were in general very little developed.

During six weeks, Professor Berres employed a great variety of therapeutic measures, but without more success than several other physicians who had previously treated the case. The greater part of the remedies only served to aggravate the pain in the loins. The patient was ultimately carried by his father to Pesth, where he was to undergo an examination by other physicians. At the moment they were about to introduce the instruments, the patient alarmed requested to be permitted to rest for a time, inasmuch as he experienced a strong desire to urinate; the urine began to flow abundantly at the same moment, the prominence of the abdomen subsided, and the disease was cured. Two years afterwards, he had had no relapse.

Means of Restoring Motion to some Immoveable Articulations. By Dr. Gidhella.—This gentleman was consulted by a young man who had a partial anchylosis of the temporo-maxillary articulation, accompanied with considerable induration and tumefaction in the surrounding cellular membrane; emollient and resolvent applications had been tried unsuccessfully during nine months. Several incisions were made by Dr. G. upon the tumefied part, which corresponded with the parotid gland; and upon the masseter muscle, both longitudinally and transversely with respect to its fibres. A considerable hemorrhage was the consequence, the swelling subsided, and by means of a bistoury introduced into the mouth, Dr. G. succeeded in dividing the resisting parts and bands which remained, and thereby enabled the patient to open his mouth, which had been firmly closed for so long a time, during which liquid aliment had been introduced with difficulty through an accidental opening occasioned by the loss of two incisor teeth.

Case 2.—A robust countryman had been for eight months affected with an anchylosis of the articulations of the two upper cervical vertebræ, in consequence of violent exertion in carrying a beam. Symptoms of acute encephalitis made their appearance in the first place, and yielded only to copious venesection, seven times repeated. The rotatory motion of the cervical vertebræ above mentioned, was entirely lost, and there was, moreover, a general tension of the muscles attached to the occiput, with remarkable tumefaction of the surrounding parts, and a severe tetanic rigidity of the sterno-mastoid muscles; he was unable to turn his head laterally, without moving his whole body in the same direction. A variety of means having been employed as unsuccessfully as in the preceding case, Dr. G. made several deep incisions upon the posterior part of the neck, at the point corresponding to the junction of the two vertebræ; others were directed toward the occipital region; blood flowed abundantly, and the pericranium was observed to be considerably thickened. The hemorrhage continued during half an hour, and in a little while, as the induration and swelling subsided, the patient was able to rotate his head pretty freely. Six days afterwards, the actual cautery was applied opposite the articulation of the two upper vertebræ, which gave rise to an abundant suppuration, and gradually removed the pain in the occipital region, which had continued for some time, and was supposed by Dr. G. to be dependent upon chronic inflammation of the cerebral envelopes. The suppuration was maintained a considerable time, but although the rigidity was greatly lessened, it was not entirely removed.

Case 3.—A blacksmith had an old anchylosis of the elbow joint, arising from a wound of this part; the forearm was bent upon the arm, and was affected with convulsive movements. The joint was one-third larger than in its natural state. Blisters, issues, &c. having altogether failed, more than a hundred incisions were successively made with a bistoury principally upon the sides of the articulation; a gra-

duated extension was made by means of a splint extending from the axilla to the hand, and at the expiration of three months the cure was completed, the patient being able to extend his arm and move it in every direction. Two months afterwards, he again consulted Dr. G. complaining of pain in the elbow, and a kind of electric shock at this part, which during the night occasioned an emission of semen. After the failure of other measures, the actual cautery, applied along the course of the ulnar nerve, which was larger and more sensible than usual, dissipated every symptom.

Other examples of the disease are given as it appeared in the articulations of the shoulder, wrist, knee, and ankle, but we are restricted by our limits to the conclusions drawn by the author.

1. The stiffness of joints caused by any alteration of the surrounding parts, is the ordinary result of inflammation, by which they become engorged, indurated and thickened.

2. In such cases, topical applications, and other remedies usually employed, are of little avail, and although they may be productive of a slight improvement, are incapable of restoring the motion of the joint. The most effectual method, is the division of the morbidly thickened and contracted ligamentous bands by means of incisions; while internal and external remedies may be used conjointly, according to circumstances.

Dr. Gidhella observes, that incisions were not productive of equal advantage in very old subjects, in whom this disease was of long continuance, as in the cases above mentioned; they removed, however, the tensive and spasmodic pain, and prevented any further alteration of the indurated parts. Where the anchylosis depends upon a consolidation of the cartilages, they are, of course, ineffectual.—*Giornale di Chirurgia Practica.*

Observation sur un ascite suivie d'hydrocèle, et termineés l'une et l'autre par la chute des testicules; par M. Hutin, Chirurgeon en chef de l'hôpital de Joinville. Monin, æt. 12, a drummer in the French service, was attacked with *fever*, for which he was treated about six weeks without receiving any benefit, when he was sent to the hospital of Blamont, where fifteen days after his arrival he was seen by M. Hutin, who had just been appointed to that institution. Upon attentive examination, M. Hutin ascertained the existence of a large quantity of water in the abdomen. The following were the symptoms he then presented: laborious respiration, pallid countenance, irregular and almost constant palpitation, frequent syncope, profuse sweats, febrile exacerbations followed by thirst, which was greater towards evening, infrequent excretion of urine, and lastly, general malaise. Diuretic beverages and pills, composed of squills, digitalis and assafœtida, were prescribed, and continued some time without benefit. One morning, while under this treatment, M. Hutin observed a considerable tumefaction of the penis and scrotum, attended with a subsidence of the abdomen, and some degree of melioration of the general symptoms. The tumefaction was ascertained to be owing not to simple œdema, but to accumulation of serum in the tunica vaginalis. Dry lint and a suspensory bandage were directed, and M. Hutin awaited the proper moment for the introduction of the trocar. Sometime afterwards he was surprised to find the posterior and upper part of the scrotum, near the perineum, in a gangrenous condition. An antiseptic cataplasm was applied, and renewed three or four times daily. A large slough separated on the fifth day, and together with the testicles in a state of complete disorganization, was removed with the poultice which had been applied the preceding evening. No hemorrhage followed, the penis preserved its integrity, the hydrocele and ascites disappeared, the ulcer left by the slough readily healed, and by assiduous attention during three months, the health of the patient was completely re-established.—*Journal Général de Medecine, &c.*

Apoplexy of the Medulla Spinalis.—A man aged sixty-eight years, of a robust constitution, middle stature, and sanguineous temperament, died suddenly in the Bicêtre. The following account is given of his previous condition. His body was slightly curved forwards, and his legs were weak and stiff, so that he was obliged to make use of a cane to prevent his falling. He could walk from his residence to Paris, but in doing so, considerable time was required, and notwithstanding his cane, he would have frequently been in imminent danger of falling, had it not been for the accidental support afforded by a tree or some other object. The superior extremities had also become much enfeebled. To a mind naturally confined, he added a difficulty and extraordinary slowness of pronunciation, which had almost excluded him from society. He lived alone, did not complain, and enjoyed a good appetite. The day preceding his death, he walked about the hospital as usual, retired to rest at his accustomed hour, and at four in the morning was found dead in his bed. It appeared that he had been several times attacked with apoplexy, of which the weakness of his extremities was the consequence.

Dissection twenty-eight hours after death.—Flesh firm; forearm and fingers flexed and strongly contracted; legs stiff and extended. On dividing the integuments of the head, a considerable quantity of black fluid blood escaped, as did also upon separating the cranium from the dura mater; this membrane was thin and transparent, all the sinuses were engorged with blood, the pia mater was injected, the substance of the brain was sufficiently firm, except at the superior and external portion of the left hemisphere, where it presented a slight superficial softening. In each of the corpora striata was a cavity capable of containing an almond, lined by a cellulo-vascular membrane, infiltrated by a yellowish serum; the superior portion of each of these cavities appeared to be formed by the

arachnoid membrane lining the ventricles, in a thickened condition. Nothing remarkable was observed in the cerebellum; the tuber annulare was slightly softened. A large quantity of black blood escaped upon laying open the spinal canal, and the meningeal veins were distended with that fluid; the arachnoid cavity contained much serum, upon which floated small drops of a fatty matter, and some globules of air. In the lumbar region, the arachnoid presented a number of cartilaginous lamina, fringed at their extremities, some of which exhibited in their centre a small projecting osseous point, opaque, and composed of radiating fibres. The veins of the medulla were distended, and especially at its lower part, were greatly dilated and flexuous; the partial septum which penetrates into the anterior and posterior fissures was deeply injected; the substance of the medulla preserved its natural consistence; it was furrowed in every direction, by numerous minute vessels. Between the origin of the fifth and sixth pair of cervical nerves, there was an extravasation of blood, about the size of a pea, which had destroyed the cineritious commissure; another, much more considerable, was found on a level with the fourth dorsal pair, which in this place, had almost entirely destroyed both the white and cineritious substance of the medulla; the coagulum equalled in volume a large hazel nut, and was slightly elongated in the direction of the spine; in the vicinity of these extravasations, the medulla was slightly softened and infiltrated with blood. The lungs were engorged with blood, and large coagula were found in the cavities of the heart; the intestinal canal was sound.—*Nouv. Biblioth. Médicale.*

Preternatural Enlargement of the Processus Dentatus.—The subject of this case, æt. 24, was found dead in the road without any mark of violence being discoverable on his body. He was emaciated, in height did not exceed that of a child twelve years of age, and presented no indications of puberty, either on his face or genital organs. The bones of the cranium were very thick relatively to the development of the other parts; the meninges were gorged with blood; the substance of the brain was firm, and also contained much blood; about half an ounce of serum was found in each lateral ventricle. The pineal gland was about the size of a pea, and contained some sandy particles. The tooth-like process of the axis was of an unusual length, projecting into the interior of the cranium, two lines beyond the level of the occipital foramen; the head of this apophysis was more than ordinarily developed, and its summit was fixed to the border of the occipital foramen, by means of a ligament, extending horizontally forwards. This abnormal disposition, reduced the occipital foramen to about half its natural size, in consequence of which, it is said, the medulla oblongata was compressed and restrained in its development. The right lung was œdematous, and the left adherent throughout to the parietes of the thorax; the heart was proportionally very large, firm, and surrounded with fat; the liver and spleen adhered to the abdominal parietes. The stomach was distended with food, a considerable portion of which had not yet undergone the process of chymification; the internal membrane of this viscus was very red. For several years, the patient had been subject to anxiety and palpitations of the heart, which were heard at a considerable distance. His death was evidently the result of apoplexy. By professor Leuhossek, the protracted childhood and other symptoms, are attributed to the enlargement of the tooth-like process, though no evidence exists that during life, any compression was occasioned thereby; moreover, the occipital foramen will admit of considerable diminution ere compression of the medulla is induced. May not this extraordinary development of the tooth-like process, have been the consequence rather than the cause of disease, the result of a rachitic affection?—*Bull. des Sciences Méd.*

Remarkable cerebral disease successively attacking four children of the same parents; by Dr. Stingel. A woman residing in the vicinity of Roeraas in Norway, was delivered in 1801, of a well formed male child, which continued in good health till his seventh year, when his vision began to fail, and his intellectual faculties and sensibility to be equally impaired; in the course of his ninth year, vision was almost entirely lost, and he had become insensible to external impressions: of all the senses, that of hearing was longest preserved. Between the ninth and fourteenth year, epileptic paroxysms supervened, and gradually became more and more violent. At the age of fifteen he was subject to convulsions, and occasionally put forth horrible cries. This state of things continued till his death, which took place in his twenty-first year. His sister, some years younger than himself, was attacked at the same age, in a manner precisely similar. The disease followed the same course, and she died, without having menstruated, in the twentieth year of her age. Some years after the birth of the latter, another male child was born, which at the age of seven years was affected in a similar manner. At the time the present account was drawn up, he had attained his sixteenth year, and the disease had followed a course precisely analogous to that which had occasioned the death of the other two. A fourth child, a female, was removed at the age of four years, to another situation, on the supposition that the metallic mines in the neighbourhood of Roeraas, might have some influence on the production of this terrible disease. She continued very well till her seventh year, when the same symptoms manifested themselves, and there is much reason to fear, will terminate alike unfortunately with the preceding cases.—*Bull. Univ.*

Intestino-vesical Fistula.—Pierre Desnel was wounded, during the war of La Vendée, by a ball, which, penetrating about the middle

of the right iliac fossa, passed out at the left groin. A considerable hemorrhage occurred from the wound. Placed at first in the hospital of Nantes, he was afterwards transferred to Painbœuf. Pus was discharged in great abundance from the wound in the iliac region, and that in the groin, gave exit to a large quantity of fæcal matter. At the expiration of a year, the former healed, the latter, some months later; and the patient, supposing himself completely cured, joined the army of Spain in 1807. The escape of wind, however, from the penis after urination, evinced a communication between the bladder and intestines. In 1813 he began to void fæces by the same route, when affected with diarrhœa; and the following year, a piece of bone, four lines in length and two in breadth, was discharged through the urethra. From that time he has continued to evacuate wind by the penis, together with fæces when his bowels were more open than ordinary; and when the urine was long retained, it escaped through the rectum. Symptoms of stone ultimately made their appearance, and when examined at St. Louis in 1826, by MM. Richerand and Cloquet, a calculus was discovered; they were unable to detect any communication between the bladder and the rectum. The patient declined to submit to an operation.

M. Monod, the reporter of the preceding case, differs from the gentlemen above mentioned, who suppose the rectum was the portion of intestine injured; this, he observes, from the direction of the ball, is almost impossible, while the discharge of fæces from the wound in the groin alone, would indicate that the injured intestine must have been situated to the front and left side of the bladder, a position which might readily be assumed by the iliac portion of the colon, and especially the small intestine; the latter, therefore, he is inclined to suppose to have been the part traversed by the ball. That the bladder should have been injured, it is not difficult to conceive, but the passage of a splinter of bone, twenty years after the accident, is not quite so susceptible of explanation. No incrustation was observed upon it, and he is rather inclined to suppose that it had worked its way from the cellular tissue of the pelvis, into the bladder, than that it should have remained twenty years in the latter, without inducing the formation of a calculus.—*Nouvelle Biblioth. Med.*

Mercurial Pediluvia in Syphilis.—In the *Osservatore Médico di Napoli*, for January 1828, Dr. Verducci proposes to substitute pediluvia of corrosive sublimate, for entire baths containing this preparation, as being at the same time more convenient and economical. About a fifth or sixth part of the following solution is added to a quantity of warm water sufficient to reach above the ankles. ℞. Hydragyri oxymuriat ℈ij., alcohol ℥i., aquæ distillat. ℔i.

The temperature should be maintained at about 112° by means of heated water, and the pediluvia should be continued half an hour each time. Dr. Verducci has in this manner effected the cure of a considerable number of chronic ophthalmias, ulcers in the throat, and primary buboes. Among other cases is the following.

In the course of the preceding April, a man æt. 50, consulted Dr. V. for a tumour on the sternal extremity of the fourth true rib, which was attributed to an old syphilitic affection, and mercurial frictions were employed without benefit. A drastic cathartic, given at this period, occasioned a chronic inflammation of the intestines; a pustular eruption broke out upon the body, the patient was troubled with pains in the bones, and a neuralgic affection of the left leg, obliged him to maintain a recumbent posture. In the month of August, when the use of the mercurial pediluvia was commenced, the limb was much emaciated. At the expiration of ten days of this treatment, the pustules were almost entirely dissipated, the tumour on the rib has disappeared, and he no longer complained of pain in the leg. On the twelfth day he rose from his bed, and on the thirteenth was entirely cured.

Traumatic Erysipelas cured by the application of the Actual Cautery.—A soldier had received several contused wounds on his head, which denuded the bones and periosteum in several places. Symptoms of concussion first made their appearance, and subsequently those of cerebral congestion and incipient compression, for which active measures were directed; notwithstanding which erysipelas supervened, and extended over the posterior part of the neck, shoulders, and superior part of the back. M. Larrey directed the application of an incandescent iron, which speedily arrested its progress,—minute brownish spots were the only traces left by the cautery.

This plan, which has been adopted for several years, in all cases of this nature admitted into the Hôpital de la Garde Royale, has been uniformly successful. According to M. Larrey, the form of the instrument employed is a matter of little consequence; it is only necessary that the surface be narrow, and that the affected part be touched with it in a great number of points. The cautery doubtless acts by concentrating the inflammation in the parts to which it is applied.—*Archives Générales de Médecine, &c.*

Inflammation by Contiguity; by Drs. Graves and Stokes.—There are many reasons for believing that inflammation is sometimes propagated by the mere contact of a sound with an inflamed part. Drs. Graves and Stokes furnish us with the following curious fact. In the dissection of a fatal case of enteritis, it was observed that the omentum, which lay extensively over the intestines, was healthy, except where it was in contact with the inflamed portions of the latter. These portions (of intestine) were circumscribed and limited in extent—some being highly vacular and red —others gangrenous—and one perforated. The inflamed portions of omentum were very

vascular and red, about the size of a dollar, and lay exactly over the inflamed portions of intestine. Similar phenomena have been often observed in other parts of the body, but no explanation has been attempted. Thus, when the pleura costalis is much inflamed, a portion of the pl. plum. corresponding or opposite to it, is always found inflamed also. So, when inflammation spreads from the pleura to the lungs, it does not follow the reflections of this membrane, but passes directly from the pleura of the ribs to the pleura of the lungs, without any communication of vessels. The following explanation is offered by the gentlemen in question. "When a portion of a serous membrane becomes inflamed, it is rendered highly vascular; it becomes at first dry and rough, but afterwards exhales either a morbid fluid secretion, or coagulable lymph; there is some reason to believe that its temperature is also increased. Now in this state of things, that portion of the opposite membrane which corresponds to it, is thus exposed to the contact of a membrane, whose *sensible properties* are altogether altered from their natural state, and which may therefore be now considered to be as it were a *foreign body*, which presenting a surface quite different from that to which the sensibility of the opposite membrane had been accustomed, must of course act as a stimulus to it, and thereby excite in it an inflammatory action." This explanation seems at least as satisfactory as Mr. Hunter's "Sympathy of Contiguity."—*Med. Chir. Rev.*

Sympathetic Apoplexy.—Some people are as tenacious of life as worms, or as animals which we may divide into pieces without destroying vitality. A gentleman, who had long shown symptoms of what Rostan and others would have termed "*Ramollissement du Cerveau,*" fell down, the other day, in a fit of apoplexy, at the age of 68, and not the slightest impression was made by cupping, leeching, blisters, enemas, and all the means which a trio of physicians (including Dr. Warren) could suggest. Mapleson left the patient for dead, after taking four ounces of blood from the head; and he was apparently in articulo mortis, after 48 hours of general paralysis, total insensibility, stertorous breathing, glassy eyes, and "dead rattles" in the throat! The physicians parted—to meet no more—at least in that case. The ordinary physician took his leave at 12 o'clock at night, requesting to be informed in the morning at what hour the patient died. No message having been sent, the physician called in the morning, and found, to his no small *surprise*, the patient at his breakfast, quite sensible, and with the full power of all his muscles!! The patient, soon after this, disgorged some pints of fetid bile, and had no return of apopletic or paralytic symptoms. This is one of the many cases, where *irritation* of the chylopoietic nerves will simulate diseases of the most fatal character—and especially those of the brain and nervous system generally. Nothing is more common than partial paralysis, particularly in children, from indigestible matters in the primæ viæ; and we are convinced that many of those apopletic attacks, from which we see people quickly recover, without any remaining paralysis, are dependent on gastric or intestinal irritation. The forgoing case is a good example.—*Med. Chir. Review.*

Habitudes of Sulphuric Acid.—M. Bellani found that the glacial sulphuric acid of Nordhausen, like common concentrated sulphuric acid, had a specific gravity of 1.843 at 50°F. and that it congealed at 53°.6. When it was exposed to air, at nearly a freezing temperature, the surface absorbed water and became covered with crystals, which, when separated and fused, gave a liquid of s. g. 1.78. On the other hand, when glacial acid was mixed with enough water to give a fluid of s. g. 1.793, it, when frozen, supplied crystals which, being melted, gave a liquid of s. g. 1.78, whilst the residual liquid had a s. g. of 1.73.

When sulphuric acid, concentrated or diluted, congeals, it undergoes a diminution of volume, almost equal in extent to the increase which takes place with water under similar circumstances. Thus, 1000 parts of fluid glacial acid become 925 parts by volume of solid acid; and 1000 parts of acid of s. g. 1.78, by congealing, become 910 parts, from which it would appear that the water in the diluted acid does not undergo the same change in solidifying, as when in the free state.—*Giornale di Fisica.*

Identity of Althea and Asparagine.—Mr. Bacon, some time since, announced the discovery of a new vegeto-alkali, to be called *Altheine*, or *Althea*, in the roots of the marsh-mallow. He obtained it as an acid malate of althea. An examination of the facts, however, by M. Plessin, leads him to conclude, 1st, that the fine green colour of Mr. Bacon's salt is not essential to it; 2d, that his altheine is a malate; 3d, that the acid malate of althea is not a salt, but a particular azotated substance, having the properties of asparagine; 4th, that this substance, by treatment with hydrate of lead, produces ammonia and a new acid; 5th, that magnesia produces the same change, forming, ultimately, a salt, with apparently alkaline properties; 6th, that the asparagine of marsh-mallow can assume several different forms by crystallization.—*Quarterly Journal of Science, &c.*

Purification of Alcohol.—A prize was offered by the Royal Academy of Brussels to the person who should prove upon what the differences between alcohol, extracted from various substances, as fruits, grain, roots, sugar, &c. depended. This was obtained by M. Hensmans, who was led, by numerous experiments, to conclude that the alcohol was always identical, but that the difficulty, more or less great, always found in rectifying it, as well also as the difference in taste, depended upon the presence of a fatty matter, and a

little acetic ether. The fatty matter, when alone, may be separated by several distillations, but the acetic ether is not removed in this way. It is better, in every case, for the removal of both, to add a little caustic potash, or soda, to the alcohol, to be rectified. Carbonated alkali does not act with sufficient energy.—*Bull. Univ.*

On Proust's Caseous Oxide and Caseic Acid.—The results obtained by Proust, relative to the substances produced by the fermentation of cheese, have been examined and described by M. Henri Braconnot. The substance which Proust distinguished as caseous oxide, he shows to have no claim to such a title, and proposes to call it *Aposepedine*, as being produced by putrefaction. It also appears to be produced in certain morbid diseases.

The properties which Proust has assigned to *caseic acid*, belongs, according to M. Braconnot, to various contaminating substances, none of which have any title to be considered as a particular acid. The substances present are free acetic acid; aposepedine; animal matter soluble in water and insoluble in alcohol, (ozmazome;) animal matter soluble in both water and alcohol; a yellow acrid fluid oil; a brown resin; acetate and muriate of potash, and traces of acetate of ammonia.

On examining the fatty matter of cheese, Braconnot found it to consist of margarate of lime with margaric and oleic acids; the butter having undergone the same kind of change during the fermentation of the cheese, as that produced when it is saponified by the action of alkalies or other bodies.—*Annales de Chimie.*

On Testing the Presence of Ammonia in a Substance.—Having occasion to ascertain whether the action of a salifiable base upon a body containing azote, was simply that of evolving ammonia, previously existing, or that of forming ammonia by the combination, M. Plessin was induced to search for a base which would effect the former object, but not the latter. Potash, lime, magnesia, and many other bodies do both, but the hydrated oxide of lead answered the purpose very well. It gives no indication of ammonia when put into contact with azotated substances not containing that alkali; even urea is not affected by it; but being put in contact with an ammoniacal salt, ammonia was instantly evolved, and rendered evident by the visible fumes which arose upon the approximation of a little acetic acid.—*Annales de Chimie.*

Memoire de M. Civiale sur les resultats obtenus par l'emploi de la lithotritie en 1827, *et sur les reproductions des affections calculeuses.*—Of thirty patients operated upon by M. Civiale, since the month of April of the year just mentioned, twenty-five have been cured, and the remainder were still under treatment when the memoir was published. Among the former was a lad seven years of age, in whom the operation was attended with great difficulty, by reason of the imperfect development of the parts, and the irritability of the patient; every obstacle however was surmounted; the stone, of the size of an almond, and composed of oxalate of lime, was perforated, and extracted in three sittings of ten minutes each.

The author asserts that the reproduction of the calculi, is not more frequent after lithotrity, than the common operation of lithotomy; and if the reverse should appear to be the case, it arises, according to him, from the fatality attending the latter, which must of course diminish the number of relapses. *A priori*, we might suppose they would occur more frequently after lithotrity, in consequence of some small fragments being left in the bladder, which would thus serve as nuclei to fresh formations; but this is in a great measure obviated by the construction of the instruments, which affords great facility of extracting small bodies. In proof of which, M. Civiale states, that he has removed pieces of straw, and other substances equally minute, which had served as nuclei.—*Nouv. Biblioth. Med.*

Influence of Electricity upon the Emanation of Odours.—It is stated in a late number of the *Antologia* of Florence, that when a continued current of electricity is passed through an odoriferous substance, camphor for example, its odour becomes gradually weaker, and eventually disappears altogether. When all electrical influence is withdrawn, it does not recover its odour till after the lapse of a considerable time. Camphor reacquires its former properties very gradually. M. Guillaume Libri, the author of this curious experiment, has promised further details upon the subject.—*Annales de Chimie, &c.*

Influence of Mercury in the Plague.—M. Moreau de Jonnés communicated to the Academy of Medicine, the following circumstance, which he observed was well attested by official documents. An Ionian boat having had some communication with a Turkish vessel, her commander contracted the plague, and was labouring under the primary symptoms of this disease on his arrival at Cephalonia. The physician of the lazaretto, supposing that the crew, in number twelve, who had lived together in the boat, had contracted the germs of the disease, endeavoured to prevent its development by subjecting them all, to the full influence of mercury, both internally and externally applied. All the individuals were successively attacked with the disease, but with this remarkable difference; in the captain and one of the sailors who had experienced no sensible effect from the mercurial treatment, it assumed a severe form, and proved fatal; while the others, in whom it had induced salivation, were affected much less severely, and all recovered.—*Archives Générales de Médecine.*

Extraction of Morphine without the use of Alcohol; by MM. Henry and Plisson. This process is founded on the facility with which

morphine may be separated from its union with narcotine, by the action of weak muriatic acid. Treat 500 grammes of finely divided opium, with about a pound of warm water, acidulated with 20 grammes of muriatic acid. Repeat this process three times, and having expressed the residuum, add to the filtered or decanted liquors, a slight excess of liquid ammonia or caustic soda of 2° or 3°; the precipitate is to be collected and carefully washed. Acidulate slightly the mother waters, concentrate them to about three-fouths, and decompose as above. The precipitate consists principally of resin, caoutchouc, morphine and narcotine, coloured by brown extractive matter. Treat it repeatedly at a gentle heat, with water very slightly acidulated, as long as any thing is taken up. Filtre and evaporate the liquid, which holds in solution a small quantity of resin, extractive, and a large proportion of the muriate of morphine, and when brown crystals have formed, they are to be washed gently, and twice purified by means of animal charcoal and new crystallizations. The black mother waters are to be decomposed by the alkalies and treated separately. The muriate of morphine purified by these crystallizations, is then dissolved in a very small quantity of weakly acidulated water, and decomposed by a slight excess of liquid ammonia; the morphine received upon a filtre, is washed, and dried by the heat of a stove. 400 grammes of opium of commerce, yielded about 27 grammes of pure morphine.

The following is the process of M. Girardin. Exhaust opium of commerce by means of pure water, concentrate the liquors and precipitate them by a slight excess of liquid ammonia. The dried precipitate is then to be washed with a small quantity of dilute alcohol, and subsequently treated with sulphuric acid till it be entirely dissolved. Filtre, decompose by ammonia, and treat the previously dried precipitate, with sulphuric ether. Dissolved afterwards in alcohol, pure morphine is obtained. Repeating the process of M. Hottot, M. Girardin ascertained, that 100 parts of the precipitated caoutchouc contained 4 of narcotine, 10 of morphine, and 86 of resinous and colouring matter.—*Journal de Pharmacie, &c.*

On Iodo-fluoric Acid, by M. J. Varvinsky.—On mixing vapours of iodine and fluoric acid in a glass globe, the latter became lined with a white film, and the iodine was absorbed; when the action appeared to have ceased, water was poured into the globe and caused an immediate deposition of gelatinous silica. By filtration, a liquid was obtained, yellow from free iodine, but becoming colourless by heat; carbonate of ammonia was then added in excess, which separated the rest of the silica, and carbonic acid gas was disengaged. The filtered solution was very alkaline, but by ebullition gradually became quite acid. Being afterwards cooled, it deposited many small crystals of a fine golden yellow colour, and possessing all the properties of a strong acid. They dissolved more readily in hot than in cold water, and, with caustic potash, produced a gelatinous salt, having a very disagreeable bitter taste. These crystals are the substance which I have called iodo-fluoric acid. On repeating the experiments I have always obtained the same results.—*Bull. Univ.* A. viii. 360.

Heat evolved during Combustion.—D. Despretz has lately read some memoirs on the heat evolved during combustion. He found that hydrogen is the body of which a given weight gives out most heat, and the metals the least. But the result is of the opposite kind if referred to equal weights of oxygen. Carbon, which, in burning, does not alter the volume of the oxygen gas it consumes, produces three-fifths of the heat evolved by the metals, iron, zinc, and tin, which reduce the oxygen to the solid state. Hence it is in the *act* of combination, that we must seek for the principal cause of the development of heat, and not in the approach of the particles. D. Despretz has also found that the quantity of heat developed by a certain quantity of a body which burns without changing the volume of the gas is the same whatever be the density of the gas.—*Phil. Mag.* N. S.

Salivation cured by Calomel.—A young man of a cachectic habit of body, was, after sleeping near a wall, attacked with a swelling in the face, unaccompanied with pain, but followed with a profuse salivation. A great variety of means were successfully resorted to, to restrain this immoderate discharge, and Dr. Guimper ultimately directed calomel in quantity of from one to two grains, three or four times a day, by which, at the expiration of six days, it was completely arrested.—*Hufeland's Jour.*

Remarkable disorganization of the Stomach; by Dr. Weidemann. In a woman who died at the age of 42, the great curvature of the stomach was found scattered over with tubercles about the size of a hazle nut. In the neighbourhood of the pylorus, the membrane was enormously thickened; towards the lesser curvature, a series of tubercles was found of the size of an egg, of the same nature with the preceding. Similar tubercles were also found on the surface of the liver and peritoneum.—*Bull. Univ. from the Eyr. et Medicinsk Tidskrift.*

New Principle detected in Asarum Europeum.—M. Régimbeau of Montpellier has recently announced the existence of a new principle in this plant, to which he has given the name *asarine.* This substance, which he supposes analogous to violine and emetine, exists in combination with gallic acid. He prepares, in the first place, an alcoholic extract from the dried root of the plant; this extract is subsequently treated with water, and

the asarine precipitated by the carbonate of magnesia. MM. Lassaigne and Feneulle had already obtained from the same plant, a principle similar to that furnished by the seeds of the cystisus Laburnum, and which they have designated under the name of *cystisine.*—*Revue Médicale, &c.*

M. Larrey's method of curing Hydrocele.—The following plan, adopted by the gentleman just named, is stated never to fail in effecting a radical cure of this disease. The patient being in a recumbent posture, the operator gathers up transversely, the skin covering the most depending portion of the tumour, one extremity of which fold is held by an assistant, the other by himself; an incision is made into this part, and the tunica vaginalis being thus exposed, a flattened trocar, terminated with a triangular point, not unlike that of a pharyngotome, is introduced. After the serum is evacuated, a gum-elastic catheter, pierced near its extremity, is passed into the cavity of the tunica vaginalis, by the assistance of the canula of the trocar, and permitted to remain till it has excited a degree of inflammation sufficient to effect the adhesion of the parietes of this membrane.—*Archives Générales de Médecine.*

Poisoning by Sulphuric Acid; by Professor Carus.—A woman at the completion of the full term of utero-gestation, poisoned herself with concentrated sulphuric acid; she concealed the deed till the instant of her death, when the last efforts of nature were employed in the expulsion of the child. On dissection the acid was found in the cavity of the pleura, in that of the peritoneum, in the heart, bladder, and even in the water of the amnios.—*Gemeins. deutsche Zeitschr. fur Geburtskunde.*

Retention of the Placenta; by Dr. Primus.—A woman was delivered on the 25th January, of a dead child, in which the putrefactive process had already commenced. The midwife made several unsuccessful attempts to extract the placenta, in one of which she ruptured the chord. The placenta was retained in the uterus, the os tincæ closed, and no contractions indicating its expulsion supervened—there was no lochial discharge. The woman notwithstanding, continued in good health until the 14th of the following May, when she suffered from colic, and had a slight hæmorrhage. These symptoms which continued but a short time, reappeared with greater intensity on the 22d of the same month, and were followed by the expulsion of the placenta, the long retention of which had been productive of no unpleasant symptom.—*Ibid.*

At a recent meeting of the Societé Anatomique, M. Bérard presented an extremely interesting case of hypertrophy of the great sympathetic, in its cervical portion. The superior ganglion equalled in volume a damask prune. M. Bérard has promised a more detailed description of this case, which is probably the only one on record.—*Nouv. Biblioth. Médicale.*

New Publications.

Prodromus Systemate Naturalés regni vegetabilis, pars tertia. Auctore Aug. Pyrame De Candolle.

Ce troisième volume est tout entier consacré à la continuation des plantes dicotylédones. L'auteur commence par les colicanthées et finit aux grossulariées. Vingt-cinq orders y sont decrits avec leur genre et sous-genre, etc. Une table des noms et des synonymes des plantes mentionnées dans le volume, termine cette troisieme partie.

Memoires de l'Academie Royale de Médecine. Tome 1er. 1 fort vol.

De la *Percussion Mediate* et des signes obtenus à l'aide de ce nouveau moyen d'exploration dans les maladies des organes thoraciques et abdominaux; par A. Piorry, D. M. P. etc. etc.

Etudes Clinique sur les émissions sanguines artificielles; ouvrage qui a remporté le prix proposé par la Societé Academique de Médecine de Marseille, par Isodore Poliniere, M. D. Médecin de l'Hotel Dieu de Lyon, etc. etc. Deux vol. in 8vo.

Anatomie Compareé du systeme dentaire chez l'homme et chez les principaux animaux; par L. F. Emmanuel Rousseau, M. D. chargé des travaux anatomiques au Muséum royal d'historie naturelle de Paris, etc. avec trente planche dessinées d'après nature; par I. C. Wernet, peintre au Muséum; dédié à M. le baron G. Cuvier.

In Press,

Abrégé Pratique des Maladiés de la Peau, fait d'après les auteurs les plus estimés, et surtout d'après des documens puisés dans la clinique de M. Biett, M. D. Médecin de l'hopital St. Louis; par MM. Cazenave et Schedel, docteurs de Médecine, etc. un fort vol. in 8vo.

Die Steinbeschwerden der Harnblasse, etc. Des Maladies de la vessie et de l'operation de la taille chez les deux sexes; par Vincent de Kern, chirurgien de l'empereur d'Autriche. In 4, avec le portrait de l'auteur, et 9 grandes planches.

Handbuch der Staatsarzneikunde—Manuel Systematique de Médecine legale; par Jos. Bernt. 3me. édition, augmentée.

Osservazioni intorno all' efficacia del seme di senapa bianco, etc.—Observations on the efficacy of mustard seed, taken internally. Tenth edition, enlarged.